DOCUMENT RESUME

ED 449 551 EA 030 824

AUTHOR Kemmerer, Frances N., Ed.; Windham, Douglas M., Ed.
TITLE Incentives Analysis and Individual Decision Making in the Planning of Education.
INSTITUTION United Nations Educational, Scientific, and Cultural Organization, Paris (France). International Inst. for Educational Planning.
ISBN ISBN-92-803-1164-6
PUB DATE 1997-00-00
NOTE 216p.; "With contributions from: Francoise Caillods, Inge J. Carmola, Weiping Peng, Daniel Teodorescu, Yan Zheng, Jeannette P. Windham."
AVAILABLE FROM International Institute for Educational Planning, 7-9 rue Eugene Delacroix, 75116 Paris, France (paperback: ISBN-92-803-1164-6, $22). Tel: +33(1) 45 03 77 00; Fax: +33(1) 40 72 83 66; e-mail: information@iiep.unesco.org; Web site: http://www.unesco.org/iiep/main.htm.
PUB TYPE Books (010) -- Collected Works - General (020)
EDRS PRICE EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Academic Achievement; *Educational Development; *Educational Planning; Educational Policy; Educational Strategies; Elementary Secondary Education; Foreign Countries; Higher Education; *Improvement Programs; *Incentives; Information Utilization; *Motivation Techniques; Rewards; Special Education; State School District Relationship; Strategic Planning; *Teacher Improvement
IDENTIFIERS *International Institute for Educational Planning; UNESCO

ABSTRACT

This UNESCO-sponsored report explores the value of applying incentive-based management concepts to educational planning. There is a continuing need for macro-educational planning if overall system coordination, coherence, efficiency, and equity are to be ensured. Chapter 1, "Incentive Concepts and Macro-Educational Planning," reviews key concepts and literature from the field. Chapter 2, "The New Educational Environment: Planning and Participation," describes recent changes in education, including globalization, financial constraints, and increasing demands. Chapter 3, "Behavioral Incentives in Educational Management," reviews the empirical record of incentives. Chapter 4, "State/Local Partnerships in Financing Basic and Secondary Education," describes the appropriate roles of state and local factors in financing through grant-in-aid schemes. Chapter 5, "Incentives for Public Higher Education," introduces a theoretical framework and reviews the experiences of recent programs. Chapter 6, "Developing a Participatory Framework for Local Teacher Incentives," describes the school-based provision of incentives for performance. Chapter 7, "Incentives for Student Learning Achievement," describes the macro-educational basis for the use of incentives to enhance learning. Chapter 8, "Incentives in Special Education," considers incentives systems in special education and offers policy recommendations. Chapter 9, "Creating an Environment for Informed Individual Choice: The Role of the Central Authorities," explains the informational and policy role of the state in incentive-based planning. Chapter 10, "Linking Information to Incentives," reviews the linkages between information and incentives in relation to the roles played by central and individual decision makers.

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Chapter 11, "Applying Incentive Concepts in Educational Planning," summarizes key conclusions of the report, regarding the new educational environment, the use of different types of incentives at different educational levels, and their potential to provide a more efficient and equitable decision-making structure. (TEJ)

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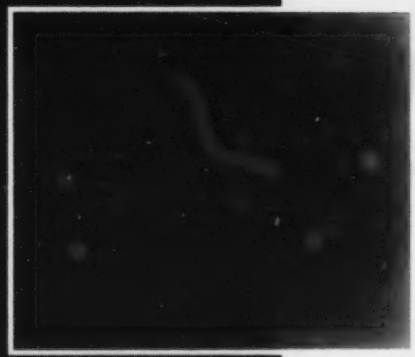

Incentives Analysis and Individual Decision Making in the Planning of Education

EDITED BY

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INTERNATIONAL INSTITUTE FOR EDUCATIONAL PLANNING

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in the planning of education

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UNESCO Publishing
International Institute for Educational Planning

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The IIEP is financed by UNESCO and by voluntary contributions from Member States. In recent years the following Member States have provided voluntary contributions to the Institute: Denmark, Finland, Germany, Iceland, India, Ireland, Norway, Sweden, Switzerland and Venezuela.

Published by the
United Nations Educational, Scientific and Cultural Organization,
7 place de Fontenoy, F 75352 Paris 07 SP, France.
Printed in France by Imprimerie STEDI 75018 Paris

Cover design by Mark Austin, Impact Design
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ISBN 92-803-1164-6
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IIEP/ph

Preface

This seminal work on incentives in educational planning is being introduced at a time when the effectiveness of educational planning is in question in various circles. Education planners are sometimes accused of being too technocratic and not always fully aware of the motivations of the different protagonists in the educational field, that is to say that they are not always sufficiently concerned with implementation issues. Planners are also accused of being too rigid and incapable of adapting rapidly to changing environments and unforeseen events. Planning methods and procedures themselves do not allow enough time for consultation and participation. The end of the 20th century has seen changes in the political and social systems of many countries, often couched in terms such as: 'democratization', 'decentralization' and 'participation'. In societies where it is essential that major decisions be reached through consultation and consensus-building, centralized top-down planning would thus appear to be inadequate.

There is still a strong case, however, for macro-educational planning if overall system co-ordination, coherence, efficiency and equity are to be ensured. Over the last two decades much work has been put into the realm of educational development. Efforts have been made to identify a range of strategic options to help increase the access and retention of both males and females at all levels of the education system. Although much has been achieved, much remains to be done: several countries are suffering from a lack of consistency in their investment policies at various levels of the education system; in most countries – including in the industrialized world – achievement levels are below expectations; too many children still run the risk of being excluded from the education system and, later on, from society. Many of these problems are due to the restricted levels of financial resources available – particularly in developing countries – but they have been further aggravated by inadequate planning, poor management of existing resources, and lack of co-ordination between implementing partners.

What is at stake at this juncture is not planning *per se*, but the type and kind of planning that is required to meet the challenges of the environmental and technological changes taking place in the world today. At a time when all countries are facing a future characterized by an ever-accelerating process of change, continually increasing diversity and complexity, and global interdependence – of economies, communications,

and of people in all walks of life – planning is needed, but a different kind of planning, one that is more open, more flexible and more strategic.

This publication deals with the use of incentives in the planning of education as a means of reconciling the market with planning, and as a way of promoting the desired behaviour in the key protagonists in the educational process. Educational planning was, in the past, too greatly concerned with preparing educational policies and not enough with the mobilization of its players. There is an increasing awareness of the fact that changes are best planned at the level where the actors are in close proximity to the educational process, at the regional and at the institutional level. Incentives correspond to the need to put more emphasis on implementation and the involvement of grass-root actors. They are intended to promote a match between individual preferences and policy objectives at the system level. Above all, incentives – when well designed – are non-coercive in nature and are appropriate within the context of pluralistic societies.

The International Institute for Educational Planning (IIEP) has been given the mandate to contribute to the development of current thinking on methods and instruments of educational planning. The concept of incentives was initiated and widely developed in the private sector context. Much less has been written on the use of incentives in the education domain, in general, and in educational planning, in particular. This book represents an attempt to fill this gap through a clarification of the concept of incentives, its application to different levels, types, and key aspects of education, and the identification of factors that make the use of incentives effective in the education sector.

Many examples discussed in this book are drawn from the developed world, in particular North America. This is the reason for the originality of the approaches analyzed. Incentives have been applied over a long period of time in the United States of America. This experience has been exploited to guide countries considering the use of incentives in their own reform initiatives. We are convinced, however, that this publication will generate more thought and debate on the effective applicability of incentives in educational planning in other developed and developing nations.

The authors rightly point to the need to take into account contextual factors in the transference of planning approaches from one situation to another. They note the importance of adapting the Northern American experience to the prevailing political, social and administrative framework of a given country. The IIEP, whose mandate it is to act as a clearinghouse for the exchange of experiences in the practice of educational planning, could not but agree with this word of caution.

Given the variety of experiences covered and the rich topics reviewed and discussed in the various chapters, this book serves the needs of both policy-makers, planners, practitioners and students in educational development.

On behalf of the IIEP, I wish to express my deep appreciation to the authors of the various chapters and, more specifically, to the two general editors, the Associate Professor, Frances N. Kemmerer, and to the Distinguished Service Professor, Douglas M Windham, both at the State University of New York at Albany. Professors Kemmerer and Windham – internationally renowned members of their profession – have contributed significantly to the continuous updating and adaptation of educational planning. Their work should be given due appreciation.

Jacques Hallak
Assistant Director-General, UNESCO
Director, IIEP

March 1997

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Chapter 1

Incentive concepts and macro-educational planning

Douglas M. Windham and Weiping Peng

1. Introduction

The purpose of this volume is to indicate the value of applying incentive-based management concepts to the planning of the education sector. The examples used here and the experiences from which they are drawn incorporate both developing and developed nation contexts. In this initial chapter, a basic definition of incentives will be provided and the advantages of the use of this concept by planners of education systems, institutions, and individuals will be asserted.

It should be made clear at the outset that a major orientation of this volume is the presentation and application of 'theory' to the work of educational planners. Too often in the planning literature, theoretical issues are considered only in a pejorative context, and are considered as synonymous with irrelevant or marginal concerns. It is this volume's assertion that the inadequacy of a strong behavioural foundation for planning practices and policies is the major constraint on the ability of planning to achieve its goals of improving equity and enhancing efficiency.

The theory presented here will be linked to actual practices at all levels of the education system, from central mandates and funding systems to individual classroom reward systems. In each case, the purpose is to illustrate how an incentives-based approach can assist planners and other educational managers in their work.

At the beginning, it is also important to clarify what incentive-based planning is and what it is not. It is a tool for planners, a new emphasis in their approach to resolving educational problems, and a new vocabulary that can help avoid or resolve confusion among the various educational participants. It is not a 'new' theory – in fact, the motivational literature (discussed in *Chapter 3* as the foundation for educational incentives) stretches back to the beginning of this century and the psychological foundations are centuries old. It is not a replacement for traditional planning methods such as enrolment forecasting and facility needs

assessment. Also, nothing in incentive theory implicitly contradicts manpower planning, social demand analysis, or investment analysis (e.g. rate-of-return analysis). In fact, incentive analysis can be, and in fact has been, used to reinforce all of these traditional methodologies.

However, when incentive analysis is applied within a context of increased educational participation (incorporating such activities as decentralization, democratization, or privatization), then the incentive-based concepts will have significantly greater value because of their recognition of government's new role as a facilitator of educational decisions and not primarily as the final arbiter of those decisions. Each of these points will be made more specifically in the discussions which follow. The detailed arguments supporting the incentive-based planning approach will be put forth. It will be shown that the incentive concepts are applicable in all public sector design, implementation, and management activities. However, the discussion also will stress some of the special advantages of incentive concepts in contexts where increased political participation and market systems are playing a larger role, either generally in the society or specifically in the allocation and distribution of educational opportunities.

The remaining chapters in this volume are organized around three main themes: the role of incentive analysis in educational decision making, applications of incentive analysis to current educational issues, and the use of incentives for specific planning and management tasks. Within the first theme, two major topics will be addressed: the new participatory educational environment and the place of incentives within the theory of educational planning and management.

The examples given for applications of incentive concepts are both quantitative and qualitative in nature and are taken from both the system and institutional/classroom levels. Formula funding in basic and secondary education and fiscal and legal incentives in higher education will illustrate the relationship between incentives as mandates (requirements) and incentives as financial flows (rewards). The incentives for improved teacher performance and for enhanced student achievement are addressed in two separate but closely related essays. Finally, a discussion of how incentives can be used to encourage appropriate opportunities in special education to meet the needs of children with handicapping or disabling conditions touches on one of the most critical topics in education today for both developed and developing nations.

The final theme of planning and management applications first will stress the continued role for central authorities in educational planning. This is an often underestimated issue in the initial enthusiasm for decentralization and privatization actions and must be understood not to be in conflict with democratization of the education system. It will be asserted here that there are certain unique responsibilities and functions for central authorities even in the most individualized educational structures. Second, the special role to be played by data systems and information flows in creating the opportunity for improved decision

making will be reviewed. The volume will conclude with a summary chapter that collects and integrates the major themes from the preceding essays. It is hoped that by the end of this volume, the readers will see the value of the incentive concepts and approaches to planning, regardless of their ideological position on the increased role of individual decision making in education.

2. The nature of incentives

Powell (1996), in an otherwise excellent discussion of the dilemma of student motivation, distinguishes between *motivation* and *incentives* only in that the first is a label used by psychologists and teachers and the second a term more common to policy-makers and economists, but suggests that these are the same phenomenon. While he certainly is correct about the common use of the terms, the concepts of incentives and motivation are conceptually quite distinct. An incentive is any *reward or sanction*, intended or inadvertent, which has as its effect the modification of behaviour. Motivation, in contrast, is the *condition* of being encouraged to behave in a certain manner. Incentives are active stimuli and motivation is the conditioned result of the interaction of the incentives with an individual's values and capacities.

For example, one can offer an incentive to teachers to retire early. The effect of that incentive on a teacher's motivation to retire will depend on the teacher's value judgements (are the conditions of employment seen as pleasurable or onerous?) and the capacity of the teacher to retire if he or she wants to (is the incentive able to compensate sufficiently for the lost earnings and related benefits the retirement could cause?). Similarly, grades for students are an incentive *but only if* the students care about such evaluations and if they have the capacity to adapt their behaviour in ways that will lead to improved performance. If either values or capacity to modify behaviour is lacking, the effect of the incentive on motivation will be minimal and behaviour will not be modified.

This distinction between incentives and motivation is essential to the use of incentives in planning. The planners must understand the values and capacities of those whose behaviour they are attempting to influence *and* must be able to design incentives that ultimately will affect the individual's motivation to change. A related point is that incentives can exist without affecting motivation, or can affect motivation without resulting in any behaviour change. Incentives will not affect motivation if they do not fit with a person's values or if information about the incentives does not reach the individuals the planners wish to influence.

Another common problem in educational planning, especially at aggregate levels, is that the planners assume the same incentives will apply to all persons. And yet, most countries are made up of multiple social and cultural settings which condition individuals to value and to respond to quite different influences. Also, if an effective incentive is

designed, but information about it is not transmitted effectively to the individuals, then the incentive will fail. Individuals can respond only to those incentives about which they are conscious and they can respond effectively only to those incentives they understand.

A final point about the important distinction between incentives and motivation is that the motivation concept must incorporate the question of the capacity to act, once incentives have encouraged the motivation to act. A war-torn community, an economically disadvantaged family, and a mentally or physically handicapped student cannot be assumed to fail to respond to educational incentives because they are not 'motivated'. Rather, each may be highly motivated but simply unable to mobilize the needed resources, human or financial, required to respond to an incentive that does not properly take into account the constraints on their capacities. Dealing with social and economic influences that lead to marginalization by class, income group, gender, ethnicity or other attributes will require that special attention be directed to the causes of the marginalization and its possible remediation.

In addition to motivation, a second major concept related to incentives is that of individual decision making. Decision making should be thought of as the ability to act on the combination of one's initial motivation and the incentives that exist. Too often, educational planning is offered as an example of one group (central authorities) making the decisions for other groups (individual institutional administrators and teachers, students, and families/communities). However, even a cursory examination of the reality of the planning process reveals that, whatever decisions are made at the aggregate level, the *effects* of education are determined by the multitude of individual decisions made at the most disaggregated level (Windham, 1980). A major unresolved issue in planning generally is the proper division between centralized and individual authority for decision making.

F. A. Hayek (1945), in his famous article on *The use of knowledge in society*, notes that in constructing a rational societal order:

> "*If we possess all the relevant information, if we can start out from a given system of preferences and if we command complete knowledge of available means, the problem which remains is purely one of logic. [But] ... the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form, but solely as the dispersed bits of incomplete and contradictory knowledge which all the separate individuals possess*". (p. 519, emphasis in original).

Hayek later concludes (p. 519) that the choice between centralized versus individual decision making:

> "*... depends mainly on the question under which of them we can expect that fuller use will be made of the existing*

> *knowledge. And this, in turn, depends on whether we are more likely to succeed in putting at the disposal of a single central authority all the knowledge which ought to be used but which is initially dispersed among many different individuals, or in conveying to the individuals such additional knowledge as they need in order to enable them to fit their plans with those of others*".

In this prescient essay, which was less appreciated if no less relevant at the time of its publication, Hayek identifies three of the key issues for the use of incentive-based planning. *First*, do we have the relevant information; *second*, do we know the preferences of individuals and the collective society; and, *third*, do we know the best way to make decisions that will reconcile the knowledge and the preferences of the two groups, individuals and government? In the half century since publication of Hayek's article, diversity within societies has continued to increase but the new informational technologies have given more ability to central authorities to maintain detailed information to much lower levels of aggregation than could have been imagined in the mid-1940s (Windham, 1993).

While Hayak, writing at a time when central authorities were in ascendancy, clearly favours greater exploitation of individual decision making, the challenge for incentive proponents today is to identify the proper balance between collective and individual decision authority. One example of the continuing need for central or national values in decision making is the concept of equity. While equity can be an individual value, the natural result of individual decisions is to accentuate initial differences as extant advantages or disadvantages are perpetuated, and often accentuated, over time. This is especially a problem in education where a convergence of disadvantage can occur. For example, a child from an economically disadvantaged home may also have the least access to quality teachers, facilities, or instructional materials and may live in a community without extensive out-of-school opportunities for formal or non-formal learning.

If one wishes to promote equity, this will be more effective the higher the level of aggregation at which the monitoring and remediation of equity is done. If the responsibility is delegated to regional or local authorities, the equity achieved at these levels may still leave a significant intra-national inequity. For example, if region 'A' is wealthy and internally equitable and region 'B' is poor and internally equitable, the homogeneity of equity *within* the two regions does not offset the significant inequity *between* the regions. Thus, a national equity standard may need to be proposed and implemented. However, even here, the most effective means for maintaining the national equity standard may incorporate incentives which are designed to allow regional and local authorities, and individuals, to respond to these incentives in ways that adapt to local values and capacities.

In the next section, a brief review will be made of the case for macro-educational planning. This will be followed by a summary of the critiques of the macroplanning methodologies, and how they are constrained in promoting educational objectives.

3. The macro-educational planning rationale

To appreciate the contributions to be gained from a more micro-educational, incentive-based approach to educational planning, it is necessary first to understand why the traditional macro-educational orientation to planning came into being. In both developed and developing nations, the central – and often regional or provincial/state governments – have seen the responsibility for educational planning as related to the 'natural' responsibility of government for a 'social good'. That is, education's benefits do not accrue solely to the individual being educated; some part of the potential benefits from education are 'externalized' to other members of society. Once education is viewed as an activity for which social as well as individual interests may arise, governmental participation in the planning, management, and finance of education indeed appears a most natural result.

The government always has two main roles it can play relative to any activity. The first is a control function with government being the lead or even dominant decision-maker. The second is a stimulative or facilitative role; in this latter role, government acts to structure individual decision making in ways most likely to create a convergence of public and private interests. This choice of roles is best viewed as a continuum rather than as isolated alternatives. In fact, full government control rarely exists and all public management may be viewed as a case of 'facilitation' of individual decision making, although the range of choice left to the individual may be slight in certain cases.

For example, the government may give teachers no flexibility in the curriculum but the teachers always retain a degree of discretion about how well and how industriously they will teach a topic. Similarly, students may be given no choice about their specialization or course of study, but they will always have some control over their own commitment of time and effort.

The enforcement of any government mandate can be through positive or negative means. A school may be offered additional funds for implementing a new programme or may be threatened with a loss of funds for failing to do so. The distinction is more political than behavioural because *both incentives* rely on the threat of loss – either of existing or of new funding. Again, however, the actual adaptation of the particular institution or individual to government mandates will depend more on enforcement of the explicit or implied sanction (loss of funds) than on the original nominal incentive. Incentives without monitoring and

enforcement (active or potential) are not likely to have significant behavioural effects.

Thus, government control or management of education, as of any other activity, is inherently intrusive on individual and institutional choices; the question is only whether the benefits of this intrusion are justified and whether there are more effective means to achieve government's legitimate objectives. As national education systems developed over the last two centuries, government control of education increased. The reasons for this greater involvement are related first to the need for accountability, because of government's concomitant expansion of financial support, and second, because of the general confidence that education served two significant social ends: increased productivity of the workforce and the promotion of greater social equity among social groups and across generations. In fact, the justification for government's greater financial involvement was itself based on the expectation that education could exert positive influences on both productivity and equity.

In the USA and Canada, the governmental participation was focused at the sub-national level to a much greater extent than was the case for Europe, Japan, and most of the developing world. Much of the discussion here will focus on central planning of education, but it should be recognized that multi-level government intervention in education changes the form but not the effects of the macro- versus micro-educational planning distinction. The degree of the constraint on central decision making changes when the central authority is more distant from the actual educational setting. Intermediate governmental authorities may have certain advantages over central authorities in their knowledge about and adaptability to local needs and capacities, but will still have disadvantages relative to individual decision-makers. In contrast, the regional authorities will be superior to local decision-makers in maintaining common standards (equity, curriculum, or learning achievement, for example) but may remain a less effective locus for managing the actual achievement of these objectives than the central government would be. The basic rule is that standardization requires centralization of authority and adaptability requires localization or individualization of authority.

In Hayek's terminology, one purpose of central planning is to introduce a 'rational' approach to the design and delivery of educational opportunities to maximize the realization of social objectives (see, for example, Caillods, 1989; Hallak,1990). As with all attempts at scientific management, the risk is that rationality will be the entry point for bureaucratization. In assuming that the educational decisions of a population of diverse individuals are best made by a central authority, the government gathers to itself both power and responsibility. It is this assumption – that a central decision-maker can make more rational decisions than can the individual members of a population – that underlies the structure of educational planning for much of the world.

This assumption is now being challenged on several fronts. First, as populations become both better educated and better informed, they are demanding more control over their own decisions, especially in a field of such personal importance as education. Second, the failures of education to provide consistent quality and to adapt to the increasing diversity of needs (and the even broader diversity of wants) has produced increased scepticism about the ability of government to define and implement an educational experience that is both adequate and appropriate. Third, the advantages to government of the power that comes with controlling education have been increasingly offset by the financial and administrative responsibilities imposed on the government. Much of the 'new educational environment' discussed in *Chapter 2* is a product of these changes. The move toward governmental decentralization and even privatization of education in many countries is more a self-serving governmental response to the new financial and political realities than a change in the political leadership's basic philosophy of government control.

In the least developed nations, the formal centralization of control of education has been exceedingly common, even though the realization of that control often has been blocked by inadequacies of funding and infrastructure (especially for communications and monitoring). The shortage of expertise and data has been used as an explanation for this concentration of authority. However, the post-colonial period in Africa and Asia has provided inconsistent evidence of the effectiveness of the macro-educational planning process. While some economies have made a successful transition to levels of international competitiveness, others continue to fall further behind. The explanation is not that centralized planning cannot succeed, but that it can succeed only in the most advantageous contexts.

As will be discussed below, the highly aggregated and frequently incomplete statistical data of the central planner rarely is as useful a foundation for certain educational choices as is the more experiential but specific and detailed information of the individual administrator, student, parent, family, or community. The purported 'failures' of individual decision making about education are more closely linked to the lack of alternatives available to the decision-makers and the individuals' financial limitations to pursue certain of their choices. As in all choices, errors will be made and basic guarantees of protection of individuals from fraud and exploitation will be required. But government needs to decide on the roles it should play and how best to fulfil these and not to assume it is the sole or even primary locus for all educational choices. There also should be no assumption that the division of responsibility between central authorities and other educational decision-makers will be the same for all countries or even the same for one country over time.

Obviously, central planners are not always wrong and individuals do not always make good choices. What must be determined is who should play what role in educational decision making and how can

educational planning be structured so as to promote both the collective and individual interests that education can affect. This volume is designed to facilitate answering this question, but not by providing a single answer for all countries in all situations. What will be proposed here is that government view itself as a partner – and not always as the managing partner – with both educational institutions and individual citizens, communities, and social groups (including Non-Governmental Organizations) in the planning and management of education. Only in this way will the economies-of-scale of collective decision making be properly linked to the comparative advantages of individual decision making; the result should be better educational choices for individuals and greater administrative flexibility and planning adaptability for institutions.

4. The dilemma of traditional macro-educational planning

The traditional macro-educational planning approaches, especially those of social demand and manpower planning, have fallen into disrepute because their use has been concomitant with, if not always directly causally linked to, the plentiful educational failures of the last four decades. The centralized structures for planning are culpable for a part of these failures but those who advocate full privatization or rapid decentralization of educational decision making have the responsibility first to identify what failed in the planning process and why. Are the problems of macroplanning inherent in their centralization and bureaucratization or are they, at least in part, correctable?

For example, many macro-educational failures are directly traceable to the quality and appropriateness of the educational information available. Others result from the environmental and organizational constraints that exist in societies undergoing rapid change or with low levels of human and financial resources. A third set of failures originate in the political marginalization of populations and the concentration of authority not just at the centre but in the hands of groups and individuals who are not interested in educational success for all members of the society. None of these problems will be solved simply by changing to a different planning methodology. The criterion for making a change is whether the traditional methodologies, operating as well as they can, are sufficient to achieve the society's educational objectives.

For example, one of the most severe crises that developing nations now face is the decline in the quality of educational programmes (see, for example, the essays in Chapman and Carrier, 1990). The macro-educational planning approaches may have contributed to these declines because much of the central government focus has been on quantitative issues of access and retention (as facilitated by system expansion), cost containment, and the preparation of graduates to fit projected employment needs. These are all activities that are politically significant and easily

measured. Much less attention has been directed to what actually happens in schools because these concerns are harder to conceptualize or operationalize and do not have the immediate political repercussions of the quantitative issues. However, over time, parents and voters have become more concerned not with simply placing their children within the education system but with what happens to their children within the education system that will prepare them for future economic opportunities and social responsibilities.

The recognition of the constraints on use of the traditional planning methodologies can be traced (Windham, 1975) to the OECD Paris Seminar on *Methodology of human resources planning* in 1971 and the first *Bellagio Conference* of 1972. In the two and a half decades since, the literature has seen recurrent attacks on these approaches and their effects on quality and equity. The major conclusions from these critiques are as follows:

(1) Early studies of the ability of the education system to promote economic growth consistently overstated the potential contribution and ignored the context-specific determinants of education's impact;

(2) The assumption that productivity is the sole or dominant intervening variable between education and employment or earnings remains suspect and has been emphasized at the expense of a recognition of education's role as a selection and signalling device for the employment markets, and as a reinforcing factor for existing inequalities in social advantage;

(3) The macro-educational planning methodologies fail to provide any more than a most rudimentary means of selecting among alternative educational choices and even less information on how education should anticipate and adapt to forecasts of changes in demands for educational levels and specializations;

(4) Expansion of access, the fit of educational output to current or projected demand, and potential earnings of graduates dominate the concerns of planners at the expense of issues of quality, adaptability, equity, and sustainability; and

(5) The emphasis of the traditional methodologies on the need for more and more accurate information has precluded a debate on whether the informational disadvantage in centralized decision making can ever be overcome.

While the above comments are generic to the macro-educational planning methodologies, each of the individual approaches has received its own critique.

To rescue education from the dilemma posed by the application of the macro-educational planning methodologies, and to make planning a

realistic and rational means to aid educational policy making, requires a re-examination of the fundamental premises of the traditional approaches. In one of the earliest accounts dealing with the conceptual basis of educational planning, Anderson and Bowman (1964) raised the question of "who plans for whom"? This question touches the core of the dilemma of macro-educational planning. Anderson and Bowman presented two alternative answers to this question. One is the model of 'planning for others' in which planning is done by a central authority and individuals are expected to follow the actions specified for them in the plans. The second is the model of 'planning for themselves' where the responsibility of authority is "...to give people opportunities to plan for themselves and to induce them to do so in ways to enhance collective goals" (Anderson and Bowman, 1964, p.7).

It is clear that the three traditional approaches fall into the category of 'planning for others'. The social demand approach views private demand for education from an aggregate perspective and substitutes individual demands for schooling with either national goals or statistical sums. The manpower planning approach often operates on a bureaucratically-defined notion of national 'needs' which may have little if anything to do with individual interests and motivation. The investment approaches originate in neoclassical micro-economic theory, but their application has focused excessively on estimating aggregate rates of return and often offer inadequate guidance to influence the allocative decisions of individuals. The macro-educational orientation of the traditional approaches to educational planning is based on the mistaken assumption "that the masses are uninformed, incapable or recognizing their own interests, and that if development is to take place it can only do so through the effort of central authority" (Foster, 1975, p. 375).

If the history of educational development in all societies, developed or less developed, socialist or capitalist, has proved anything consistently, it is the assertion that no educational plan will succeed unless it can attract and motivate individuals at the grass-roots level to take actions in the same direction as intended by the plan (Foster, 1975; Windham, 1980). In line with this argument, and given the current educational crisis, there is an urgent need to shift the ideology of development thinking in socio-economic programmes in general, and education in particular, from a vague notion of aggregate considerations to a more people-oriented notion of development, with a commitment to improving the lives of all people, especially the disadvantaged segments of the population, or the marginalized groups. Therefore, the solution to the dilemma of macro-educational planning lies in the second alternative described by Anderson and Bowman, the model of individuals 'planning for themselves'.

To summarize, the *social demand* approach, which emphasizes the aggregate expansion of education in line with the increases in the age cohort for education, assumes education is an affordable right. The problem for many countries was that the focus became one of buildings and personnel and not one of creating effective learning environments.

Inadequate facilities labelled as schools and undertrained personnel labelled as teachers do not represent a planning success in any but the narrowest terms. The inability of government to provide the time and resources sufficient for an adequate education system has resulted in a substantial financial expenditure with few compensating improvements in human resource skills. Also, since education expanded unequally by location and social class, the initial result of many social demand planning efforts was to reinforce rather than to offset existing social inequities.

Some of the techniques developed as part of the social demand methodology remain relevant today; for example, the school location planning and teacher supply and demand models. However, the social demand approach and its corollary assumption that education was primarily if not exclusively the domain of central government have been found to be fiscally unrealistic and pedagogically unsustainable. The decreasing rates of school attendance and retention in many African schools in the 1980s and 1990s reflect the dissatisfaction of students and their parents with expansion efforts that outran learning effectiveness conditions. Choices must be made to place government in partnership with individuals and communities to promote greater access to true learning opportunities. The 'opportunity' to participate in education means little or nothing when the reality is a school or classroom where learning cannot take place. The policy alternative is not to accept continuing inequality of access, but for government to work with others to mobilize sufficient resources so that true learning conditions are met.

The *manpower planning* methodology appears intuitively obvious but its record of misuse indicates the questionability of its key assumptions. These assumptions are: (1) the education system must provide graduates with the skills and knowledge to 'fit' the specific manpower needs of employers; (2) a low rate of substitutability exists between forms of education and specific skills so that clearly defined education-occupation links exist with certain types of graduates required for most forms of employment; and (3) increases in the demands for occupations (and thereby, for types of graduates) may be projected based on forecasts of aggregate or sectoral economic output. Stated simply, manpower planning is premised on linking forecast changes in economic activity to forecasts of employment requirements, and then linking the employment changes to forecasts of educational requirements. The first of these linkages requires identifiable, specific, and stable growth to occupational demand coefficients and the latter requires identifiable, specific, and stable occupation to educational requirement coefficients. These assumptions were questionable even in the 1970s when the manpower planning approach was first questioned but are even more suspect after the last two decades of rapid changes in technology and employment. The fact is that the link of economic growth to occupational demand is anything but identifiable, specific, or stable and the same conclusion may be reached about the link of occupations to educational requirements.

Both in schools and in higher education, the premium now is on preparing students who are adaptable to a variety of employment opportunities. Planners and policy-makers have much less confidence now in their ability to forecast the direction, let alone the extent, of economic and occupational change. Without this information, the forecasting of educational requirements becomes an empty exercise. In fact, tracer studies, which recurrently track the job search periods, employment, and earnings of an institution's graduate cohorts provide more valuable information for student and institutional planning than could any centralized forecasting methodology. Forecasts can still be useful, but only in conjunction with a greater appreciation of the differences in educational experiences of individuals and the evolving nature of the employment market.

The investment approaches to educational planning have as their signal advantage the explicit recognition that education is an investment process. Inherently, educational activities represent expenditures of time, funds, and effort in the present in the anticipation of future benefits. There are often immediate consumption benefits in education – the enjoyment of learning and the personal interaction with peers and teachers – but the social importance of education exists in its ability to change individuals over time. The investment methodologies, both rate-of-return and net present value calculations, are logical devices taken from the business sector and applied to educational planning. However, this transposition of the investment model to the analysis of social activities such as education suffers several significant limitations.

Not all the costs or benefits of education may be expressed or are even expressible in monetary forms. The investment model requires a *numeraire* that is the same for all effects. One cannot sum across such categories of educational costs as financial and psychic burdens or such benefits as individual employability, enhanced earnings, stronger consumption habits, and changes in values. For an individual, these diverse effects are reducible into a *numeraire* of subjective utility: Are these probable benefits worth these probable costs? However, public investment requires a political decision on the utility of a diverse population who may both value different things and value those things in different ways. The common result of the inability to incorporate all values is that the analyst focuses solely on the monetary ones. Even in individual choices this would represent a significant bias (costs are both more immediate and more likely to be easily quantifiable in a financial form). For collective decision making, however, the result is to ignore the social externalities that are the primary reason for involvement of government in education in the first place.

In brief, each of the three traditional methodologies have been found inadequate in some critical way. Social demand planning ignores the demand side of the market and underemphasizes issues of sustainability and quality. Manpower planning assumes a level of stability in economic growth-employment and employment-education relationships that simply

has not proved accurate. And the investment methodologies fail to weigh non-monetary factors appropriately and are more appropriate for individual than for collective decision-making situations. The last two decades have been characterized by the seeming contradiction of the acceptance by most planners of the failure of the traditional approaches and yet the continuance of their use. The problem has been the lack of a viable consensus about what alternative methodology or methodologies can replace the formally discredited ones. Writing in 1975, Windham posited that traditional macro-educational planning would survive regardless of the evidence of its failures. He notes (p. 197):

> "*The problem is more than the conservatism of local [planning] personnel and politicians. The very institutions which have promoted large scale inter- and intra-national planning of education were established on the supposition that such planning could have a meaningful impact. ... such groups will have a great reluctance to examine the basic question of the usefulness of their own existence*".

Macro-educational planning will need to survive because legitimate national and regional interests in the effects of education will continue. However, this survival should be assured not for the protection of bureaucratic structures and personnel, but because the macro-educational planning process has shown the ability to adapt to and to serve the needs of all members of society. The use of incentive-based concepts is one of the major means through which macro-educational planning can be made more adaptable to the new social contexts and economic realities anticipated for the next century.

5. Summary views

The planning environment for education has changed in line with the emergence of participatory planning and increased political and planning democratization. Also, there is a better understanding now of the comparative advantages of central and individual decision making and the need for each nation to develop its own balance of the two. One fact is obvious, however: increased individual decision making, conditioned by properly designed and communicated incentives, is a major new planning resource. The purpose of this volume is to indicate how that resource can be exploited to the benefit of both the individual and the larger society.

Facing the twin effects of criticism for system failures and constrained fiscal resources, many governments are now willing to reconsider the role of the central authorities in the planning, delivery, and evaluation of education. It is now more generally recognized that planning can promote qualitative enhancement and increased relevance only if it directs attention toward the issues of motivation, attitudes, perceptions,

and actual behaviours of the participants in the educational process – administrators, teachers, students, families, and communities. The challenge of how to adapt the planning role from one of aggregate expansion to one of improved educational outcomes, from the supply of inputs to the utilization of those inputs to promote effective learning, from concern with averages to concern with the full spectrum of participants is a challenge that incentive-based planning is prepared to meet.

The appropriate administrative first question is not whether macro-educational planning can succeed under any conditions. The appropriate question is what are those conditions and how common are they. Finally, an attempt must be made to identify where macro-educational decision making has unique comparative advantages over less centralized and more participative forms of decision making. The research of educational planning suggests that there are certain areas where centralized decisions can be both appropriate and effective. These have to do with two main management concerns: standardization of schooling and promotion of equity.

In the next chapter, the changes in society will be seen as having had a dramatic effect on the attitudes both of politicians and individuals toward central versus individual decision making. It is these changes, in fact, which condition the whole of the analysis of this volume. In *Chapter 3*, more detail on the terminology and the concepts of incentive-based planning will be presented.

However, a final point should be made, before proceeding further. The goal of planning remains the betterment of the lives of people and this is no stronger an objective anywhere in public policy than in the education sector. Incentive-based planning, and the attention directed to it here, can be justified only to the extent that it increases the ability of society to enhance the conditions of its members. This is also an appropriate criterion by which this volume, and its individual essays, may be judged.

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Chapter 2

The new educational environment: planning for participation

Françoise Caillods

The last ten to fifteen years have been marked by a number of very significant changes in the world environment such as the globalization of the economy, a growing economic and financial uncertainty, a decentralization and privatization process which have contributed to multiplying the decision-making loci outside of the ministry of education. All of these changes have made it imperative for educational planners and decision-makers to question their planning practices, and to modify them so as to take the objectives, the policies and actions of other partners in the educational process more into consideration. This chapter will discuss in a first section the changes that have occurred in the educational environment, including the modernization of the state leading to its new form of intervention. The second section reviews the educational policy-makers' agenda in this new context. The consequences of these changes on educational planning are outlined in a third section: what does planning means today and how should it evolve? The consequences for incentive planning in particular will be reviewed, although these will be elaborated in further chapters.

1. Changes in the educational environment

1.1 Globalization of the economy

One of the major changes in the world environment in the last decade and a half is related to the rapid diffusion of information through the new communication technology. This diffusion, together with a process of liberalization of trade and deregulation of capital movement, has led to swift, large-scale transfer of capital, the internationalization of production and a globalization of the economy.

In a world with fewer barriers, information on labour costs and labour quality is readily available; new technologies make it possible to decentralize whole or parts of production (such as routine production) and to relocate it in lower wage regions, in countries having a cheap,

flexible and increasingly trained labour force. The consequences of such trends on countries' economic outlook and labour-market operations are far-reaching, but they differ according to the region concerned. In developed countries, many unskilled jobs have disappeared, production is either being automated or relocated in lower-wage countries: this has given rise to mounting levels of unemployment (or underemployment) and to the marginalization of the less well educated. In developing and in transition economies, on the other hand, it has opened new development prospects as foreign investments no longer depend on the existence of natural resources but increasingly on the availability of qualified and flexible human resources.

In East and South-East Asia, the introduction of new technologies, the internationalization of economies and the movement of financial markets have led to a virtuous circle of rapid export-driven growth in output, a fast albeit lower increase in labour productivity, and rising employment. This process, backed up by an appropriate macro-economic policy, on the one hand, and a forward-looking education and training policy, on the other, has opened the way to endless prospects of growth and development. In other regions of the world, such as Latin America and the economies in transition, the consequences for economic growth and employment have been more tempered. As we shall discuss below, the process of adjusting to globalization has been somewhat hampered by the structural adjustment programmes and heavy debt servicing. In these countries, a number of highly educated and trained members of the labour force, working in the competitive sectors of the economy, and enjoying fairly highly paid jobs live alongside large numbers of unemployed and poor members of society. The latter have been excluded from the modernization process: their number has risen sharply and they have become a real object of concern.

The consequences of such trends on educational planning are manyfold:

- No countries can really afford to remain outside the present revolution which information technology has brought about. Investing in education and training, increasing access to educational services, improving the quality of education, and ensuring a minimum level of knowledge for all has become a *sine qua non* for a country to remain competitive in this constantly evolving global economy.
- It is becoming increasingly difficult to make precise estimates of how many people will be needed in the future in different occupations and different sectors of the economy. The economy is too unstable in some countries; in others, technical change is so rapid that large numbers of jobs are expected to disappear or to be completely modified, while new ones will appear. It is more realistic to increase the adaptability of the education system than to expect an

> increase in the predictability of the economy. The key words in education then become quality and flexibility. Youngsters should no longer be trained for a specific job, but rather be prepared to take a series of jobs: they need to be given the necessary knowledge, generic skills and attitudes that will allow them to learn on-the-job and to continue to learn throughout their working lives, as required. Providing to all a high quality, broad-based education, followed by short-term training is considered the key to flexibility for future adjustment requirements.

The integration of the world, thanks to information technology, not only has economic consequences, but also cultural and political ones. Culturally, television and the media in general tend to propagate the same message, strongly impregnated with Western cultural norms and values. Likewise, languages are tending towards uniformity: English increasingly becoming the international medium of communication. Whilst the process of world integration through information technology continues, in different parts of the world we observe various manifestations of an identity crisis on the part of nations and their citizens, the multiplication of internal conflicts between different ethnic groups, a return to fundamentalist religious practices, and a more general phenomenon of turning inward together with an increased local protectionism. "While peace seems less impossible than during the cold war, war seems less unlikely" (Delors, UNESCO 1996).The hope is, of course, that the widespread use of information technology may have a democratizing effect if citizens become better informed of what is happening in their own country, and elsewhere, and use the information obtained through radio, television, and the Internet to challenge their own particular government (Washington 1996). In any case, such trends have consequences for education. Curricula in particular have to emphasize the teaching of such skills as: learning to live together, understanding others, communication, languages, and such values as tolerance, respect for others together with a culture of peace.

1.2 Budgetary and financial constraints

Extending the coverage, increasing the quality of education and training, and fighting against marginalization require a high level of resources. This is taking place in a context of slack economic growth, following several years of economic depression, and of mounting budget deficits in a large number of countries. Providing such resources is often beyond governments' financial reach. The globalization of economies, the need for countries to remain competitive, and sometimes international financial institutions are maintaining pressure on governments to adopt very similar liberal macro-economic policies, which mean, in particular,

cutting government expenditures and reducing budget deficits. All over the world, reducing state spending has become the driving force behind economic policy in developing and developed economies alike. This has a direct impact on the resources available for education.

Latin-American and African countries were particularly hit by the economic crisis of the 1980s. This crisis, the debt burden which accumulated over the years and the new economic policies which were subsequently adopted in order to restore stability, led to drastic reductions in public resources and in government funding available for education. In order to finance their ambitious programmes for basic education, which were adopted after the *Jomtien Conference*, 1990, governments have had to reallocate funds within the overall budget, and more often within educational budgets. Funds for technical and vocational education, training and higher education have been reduced and reallocated to primary education, sometimes to the detriment of the quality of the education provided at the former levels, thus endangering long-term prospects.

Most countries have diversified their sources of funding: at basic education level, parents and communities have been asked to contribute in diverse ways, for example, through the construction of schools. Tuition fees have been introduced in the state schools of numerous countries at post-basic education level; enterprises are compelled to contribute to the financing of vocational education and training through specific payroll taxes or they are encouraged to undertake the training of their own workforce. To make up for a loss in their resources, vocational and higher education institutions are also increasingly engaging in productive activities or in selling their services (technical assistance, training) to neighbouring enterprises or communities.

Private proprietary schools and training centres are also being promoted at all levels, including higher education, in a large number of countries. In addition to reducing the burden on the government's budget, privatization of schools and the creation of a competitive market for learning is said to improve efficiency in the use of resources, cater for pluralistic preferences, and act in favour of making institutions more accountable to their clients. Although these effects still have to be proved, privatization in finance and/or the control of education has become a significant trend.

As more and more people and institutions get involved in the financing of education, the necessity to deliver value for money and the pressure to allow greater participation in the decision making of all players increases. Ministries of education, although they may continue to pay for the largest part of public, and sometimes private education, have to share responsibilities in the decision making with other partners. Within government itself they have to negotiate fiercely with other ministries such as the ministry of finance for their budgets, with the Civil Service Commission for the management of teachers, and with Ministries

of planning for building and equipment. In several countries their hands are tied, and the margin of manœuvre is narrow.

Finally, but equally significant, funding agencies have become important and indispensable partners in the financing of the development of education. In some instances, however, the consequences of this trend on educational planning and more generally on the process of policy formulation have been devastating. Some agencies impose their own agendas, by making financial support subject to certain conditions, without engaging in a proper dialogue with the government and the different players in the host country. Some countries have even turned from planning to marketing, adopting indifferently programmes or projects that are proposed and financed by an aid agency (Samoff, 1994). This phenomenon is likely to continue for many years unless countries reinforce their planning mechanisms, develop their own policy framework and strengthen their capacity for policy negotiation.

1.3 Reform of the state

Another major element of the educational context is that of the reform and modernization of the state which is sweeping through many countries. The central government has lost many of its earlier prerogatives.

On the one hand, the control that governments have over their national policy agendas has progressively been eroded by the globalization of the economy and its integration into a larger trade and economic union. Monetary and fiscal policies very much depend on international economic conditions, particularly in those countries subject to unpredictable movements of financial markets[1]. This is also largely the case with respect to employment and welfare policies and this has consequences in terms of increased poverty, marginalization of certain groups and violence. Integration of countries into a larger trade and economic union is further reducing the margins of manœuvre of various countries.

On the other hand, the state's efficiency is being questioned, sometimes seriously, within countries. After the second world war, or at independence, governments in developing countries took over many responsibilities in the social and economic domain, including creating and directly operating enterprises. Over the years, such systems have become highly bureaucratic, rigid and generally inefficient. In developed countries too, state bureaucracies are now accused of being tentacular, heavy and slow. The multiplication of controls and regulations, and the burden of social expenditures, which have reached no longer affordable levels, are said to impede initiative. A failure to restore economic growth,

1. This is mainly the case in Latin-American countries as the experience of Mexico and Argentina demonstrated in 1994 and 1995.

reduce unemployment and alleviate poverty has recently brought to light the limits of the welfare state.

Lastly, the state's legitimacy is sometimes questioned not only in countries where there is no real democracy, but also in those societies where the same élite of top administrators seems to be involved in running not only the country's administration but also key areas of the private sector. Such tendencies have led numerous countries to reform and modernize the state: this is being done through decentralization, privatization and introducing new forms of state interventions: delegating, contracting and entering into partnerships.

Increased decentralization of responsibilities to lower levels of government is taking place in all sectors of activity, as an attempt to improve the efficiency in state governance and to redistribute the power amongst the different actors. According to the principle of subsidiarity, central governments should not administer affairs which are better dealt with at lower administrative levels. It is also a way of dealing with many social problems that the central government no longer feels able to tackle.

In education, the decentralization movement often started as a way of tackling the financial crisis. Facing severe budgetary constraints, central governments passed the burden of financing primary and secondary education to provinces and local authorities. Decentralization has also been justified by the need to correct the inefficiency of central administration, accused of being too bureaucratic and too remote from the schools where action is really taking place. Lower levels of governance have therefore been given authority and responsibility to run the schools. Decentralization however means different things in different countries depending on how much authority has been transferred on what and to whom. In some cases, the transfer of authority is limited and only takes place to the benefit of a lower administrative level within the ministry of education (deconcentration); in other cases, the transfer takes the form of a real devolution of responsibility to a sub-national unit of government, accountable to the local population. Many local governments, which were asked to finance the schools, took the opportunity of becoming more involved in their running and management.

This change in attitude is to be placed within the context of the progress of democracy at the global level: citizens, parents, parties and local representatives ask for more openness, more transparency and more involvement in the running of the institutions they finance.

The decentralization process is not devoid of problems as rich provinces and communities are quicker than others at grasping new opportunities as they arise: they open more schools at primary and secondary levels, have the necessary staff and resources to develop new curricula; and when it comes to obtaining resources from the central level, they often have a stronger negotiating power. Without proper central co-ordination, decentralization has often led to increased disparities. Decentralization to the regional level does not automatically lead to greater innovations either – such actions depend much more on the

schools – nor does it translate into efficient governance: many regions badly lack administrative skills and it takes time to train administrators at the local level. Finally, there is no guarantee that regional and local authorities will not be tempted by clientelism, offering positions and posts to political friends rather than to those who have been trained as administrators.

An extreme form of decentralization takes place when the authority is transferred to a private firm or an individual. Privatization can also lead to great inequalities if compensatory measures are not taken.

Granting a fair amount of administrative and financial autonomy to individuals, institutions, privatizing the management of the schools while maintaining the support of public funds, entering into partnership with other education providers (Churches and Non-Governmental Organizations (NGOs), enterprises, etc.) is increasingly the way a modernized state intervenes in education. Several experiences exist of central governments passing contracts with a region, with local authorities, with NGOs, with private providers, with enterprises, whereby the latter will deliver education or training to students or trainees according to given specifications, with partial or complete government financing. In some cases, the regional or local authorities themselves sub-contract to other units or institutions the responsibility of carrying out an educational or training activity. The state, thus, is no longer a direct operator of schools and training centres; it becomes a promoter, an animator and a regulator, fixing standards, distributing funds according to different criteria including performance, and promoting equality of opportunities and results. Such developments have important consequences for educational planning. Before analyzing them it is worth reviewing some of the issues which are on the policy-makers' agenda, and which influence the scope of educational planning.

2. The policy-maker's agenda

In order to meet the challenges of today's society, raise the educational level of the population, enhance the workforce's adaptability to increase the country's competitiveness, and fight against social exclusion, the education policy-maker *has* to take action in at least five different areas. These are, among others: promoting demand for education and training, increasing the quality of education, making the content more relevant to different groups and diversifying the delivery system, preparing youngsters for the world of work and implementing lifelong education, finding new resources and defining new ways of operating through partnerships.

2.1 Promoting demand for education

Most countries have difficulties in enroling the final 20-25 per cent of their school-age population at primary or secondary level. Some countries, which had previously reached universal primary education, saw their gross enrolment ratio regress in the 1980s. In Sub-Saharan Africa as a whole, gross enrolment rates (GERs) at the first level fell from 77 per cent in 1980, to 71 per cent in 1985, and to 67 per cent in 1990. In other regions, they have increased during the same period, but certain groups remain under-enrolled, such as girls in remote rural areas, children of special ethnic groups or castes, working children and children in the streets of major cities. In spite of various efforts, admission ratios of such groups remain low in Arab States, South Asia and parts of Latin America as well, and their level of drop out is high. Low participation rates cannot always be attributed to the absence of schools. They are due to a lack of demand and the reasons for that are many. Some have to do with poverty, the high direct and indirect costs of schooling, and with cultural barriers of all kinds. In some countries they are related to the deteriorating economic conditions: in Benin and Togo, for example, enrolments declined in the late 1980s when prospects of obtaining a job in the modern sector vanished. There may be similar reasons for the recent decline in secondary enrolment rates in Eastern Europe and Russia, but not exclusively. The lack of interest and motivation of youngsters after a certain age is another. This means in all cases that the planner's attention has to shift from a mere focus on providing supply to aiming at motivating learners, creating and sustaining demand.

Several measures have been tried in various countries, with varying degrees of success, to encourage pupils to come to school. Reducing the cost of schooling for disadvantaged children – since many of them are working, their opportunity cost is already high - free textbook schemes, free lunches and uniforms are part of such programmes. Creating smaller schools, reducing the distance from the home to the school and appointing female teachers are other measures which have been taken to provide girls with a more secure environment and encourage their participation. Changing the school calendar and introducing flexible scheduling of classes to accommodate the requirements of working children and reduce non-attendance is another set measures. Community-care schemes have also been introduced in some countries (e.g. Colombia) to free daughters from caring for their siblings and enable them to attend school.

Action on demand, in some instances, requires more radical action such as community mobilization and community organization, with a view to promoting its members' direct involvement in the decision-making process at the local level. Acting on the environment through integration with other development activities, diversifying delivery systems and contributing to the villagers' empowerment, and particularly to that of women, attempting to improve their self-image, their self-esteem is often a precondition.

Ultimately, it is also a question of the quality and relevance of the education imparted. If, in the schools, and the non-formal education centres, pupils do not seem to learn much, and repeat several times without learning more, neither parents nor pupils will be keen to stay on. Several studies have shown the correlation between the number of repetitions and drop outs. Important questions for the planners to answer are: how to increase the quality and relevance of schooling for all (and not only for a few fortunate ones)? How to make the school-learning process more flexible and responsive to the characteristics of pupils coming from very heterogeneous backgrounds? How to motivate learners and interest them in learning during but also beyond schooling? How to finance the cost of educational inclusion of marginalized populations? (Mun C. Tsang, 1994). These are important issues to tackle, where traditional macro-planning is helpless.

The demand of the learners is not the only one that needs to be addressed. Those that employ educated people also have to be motivated to do so. In several countries, young school and university graduates remain un- or underemployed because enterprises prefer to recruit unqualified persons, to whom they pay less, or continue to recruit expatriates. The example of the large number of mathematics and science graduates who remain unemployed in developing countries where there is a clear lack of such personnel is a case in point. Enterprises have to be convinced of the necessity of recruiting and using the young educated people, rather than letting them go abroad or remain unemployed for many years; just as there is a need to convince them of the need to invest in the training of their workforce.

In an increasingly competitive market, companies which do not invest in training are at a disadvantage. For a company, training workers and/or recruiting properly trained workers lead to both a higher level of productivity, and allow integration of new technological or managerial innovations. Yet, in spite of obvious returns to training, many enterprises seem reluctant to train. Small- and medium-sized enterprises are those who invest least. They may be afraid of their workers' being poached; possibly also many of them do not benefit from a market stable enough to convince them of the need to invest in the medium- or long-term.

To make up for companies' under-investment, the state is providing vocational education and training in many countries. Budgetary constraints, as well as the search for greater efficiency, are forcing governments to share the costs of vocational education and training with enterprises. Specific measures have then to be devised to encourage them to train or, at least, finance the training which would be conducted elsewhere. Some countries have introduced specific earmarked taxes, such as payroll tax, to finance training. Tax rebates for those companies who undertake training themselves is an alternative which is becoming increasingly popular: enterprises are encouraged to train through an exemption of the payroll tax or through the deduction of training

expenditures, up to a certain level, from corporate taxes. In countries where such fiscal devices exist, the number of enterprises engaged in training has significantly increased and this has led to the development of a real market for training (Atchoarena, 1996; Atchoarena; Caillods, 1995). Involving enterprises in the financing of education and training is a powerful instrument for associating them in the overall management and regulation of the training system, thus contributing to the development of real partnership.

Planning for the demand of education is a lot more complex than planning the mere provision of school places. It implies designing new financing mechanisms; it implies consulting and involving the stakeholders in the management of the institutions concerned, thus contributing to making the education or training provided better and more relevant. Such planning requires different instruments (proper incentive structures, new ways of channelling existing resources to the users and adequate monitoring mechanisms), and a change of approach emphasizing partnership as much as control: process as much as product.

2.2 Increasing the quality of education

Increasing the flexibility of the workforce to improve the countries' competitiveness, fighting against social exclusion in society, and heightening demand for education, are objectives which cannot be achieved without improving the quality of education. This is not a new concern. For many years, however, the planners' attention has been focused on the quality of inputs: the pupil/ teacher ratio, the proportion of trained teachers, the equipment available, the condition of the buildings, etc. While such concern is justified by the appalling conditions of primary and secondary schools in many countries, particularly following the adjustment policies, it has become clear that it is not enough. A number of studies have demonstrated that expensive inputs did not necessarily lead to high pupil performance: low pupil/ teacher ratios, which weigh so heavily on education budgets, are no guarantee that the education will be good nor that the teachers will use active and pupil-centred methods of teaching. In developing countries, investing in teacher training, the distribution of textbooks and in improving the buildings seem to be a more worthwhile investment (Fuller, Clarke 1994; Hanushek, 1995).

In recent years, attention has moved from a concern for the quality of inputs to one focused on outcomes: learning outcomes, i.e. the level of performance of pupils and the attitudes they develop, and the capacity of school leavers to find a job and to integrate successfully into society. More and more studies are being carried out at country level to measure how much pupils learn and to identify the factors which influence their level of achievement. This is now considered an integral part of the tasks conducted by educational planners in their efforts to monitor the development of the education system.

Research has shown that there are considerable variations in pupil achievements between different schools as well as in their capacity to improve such achievements; many of these differences remain unexplained by variations in the measured characterization of schools (Hanushek, 1995): this leaves room for a school effect that nobody really knows how to measure, whether this is to be attributed to the culture of the school, its pedagogy, its management style or the degree of the parents' involvement. The educational process is very complex and the control over what is happening in the classroom is loose. Whatever the control mechanism, standards and regulations, in the end, teachers are alone in front of their pupils. There is no easy recipe for making a good teacher or a good school. Professionalizing teachers, allowing them to experiment with different teaching methods and styles, encouraging them to adapt – within certain limits – the content of their teaching in order to address the pupils' specific learning needs is a positive step in this direction. It is also a challenge. The implementation of such a policy requires training the teachers, and strengthening their body of knowledge so as to give them the ability to understand and solve pupils' problems. It also requires motivating them through support and an enhanced status.

Granting schools more autonomy is a necessary development in this framework. Improving institutional management is another one. Empirical studies have shown that the headmaster contributes a great deal to a school's effectiveness. A good headmaster contributes to creating a good climate, establishing team work, linking up with the parents and the community, managing resources adequately and finding new financial resources, etc. School heads are and will increasingly be asked to play a leadership role in their institution as well as an advisory role vis-à-vis their colleagues: this is a task, however, for which they are not, in many instances, prepared. The government concern will then be to train teachers and heads, and to put into place adequate support structures for both teachers and headmasters. Different reward mechanisms may also be envisaged, possibly linked to the school performance.

2.3 Diversifying the delivery system to increase the relevance of education

Enroling children from marginalized groups, working or over-aged children, requires diversifying the delivery system, allowing for more flexible and less formal approaches to education, as discussed above. Increasing the quality and the relevance of the message necessarily implies individualizing the message that each child receives, allowing for more diversified content and pedagogical approaches.

As the proportion of an age group enrolled increases at higher levels, and as systems gradually move towards mass secondary education, the heterogeneity of classes also increases. New pedagogical modes have

to be invented which are more active, more likely to motivate children to learn at their own pace. New curriculum content, new modes of organization of studies, and more flexibility in class organization is also required to satisfy the need of the increasingly diversified groups of students. This is particularly true of the secondary school curriculum which, in a large number of countries, was designed to prepare a small élite to enter higher education and is therefore no longer adapted to the actual situation. Above and beyond the teaching of a common grounding, the multiplication of options and specializations is very much on the agenda of different ministries in medium- and high-income countries.

The new techniques of information (television, radio, audio and video recording, and computers) may offer in this respect opportunities for diversifying the content as well as the modes of teaching and learning. Of course, the computer will never replace a teacher, and no media can replace the socialization process which is taking place when pupils meet in a classroom, work in groups, etc. Competent teachers will remain indispensable to teach pupils how to learn, as well as to motivate individuals and animate groups. However, when, thanks to their teachers, pupils have acquired the ability to learn, have developed the habit of setting their own goals and planning their own work, self-instruction – with or without a computer – becomes possible. Computer-aided instruction as a complement to ordinary teaching can and will allow pupils to advance at their own speed, to choose the options they prefer and to build up their own learning path. While this may appear, at first, primarily an objective for developed countries, it may well be a solution for developing countries as well. A similar approach was at the core of the programme of the *escuela nueva* in Colombia (Schiefelbein, 1990).

Diversifying education through distance education is not new but is nevertheless a very promising way of offering education opportunities to those who cannot continue their studies in a conventional way, to adults, to children and youngsters from remote areas, and to anybody requiring flexibility in their working hours. The introduction of distance education can help in 'reaching the unreached' at secondary or tertiary level, and in increasing significantly the number of students enrolled at these levels at much lower costs. Planning and managing such programmes, projecting their costs and financial requirements, assessing their quality has to be carefully done. Motivating learners in such programmes is another challenge.

2.4 Preparing for the world of work and making lifelong learning a reality

Preparation for the world of work starts in basic education, continues through secondary education where students acquire the basic generic and personal skills which are very much in demand in the labour market, such as literacy and numeracy, creativity, the capacity to think and to solve problems, the ability to communicate orally and, in writing,

the capacity to articulate an argument and to continue learning throughout the working life. Work-orientation is also often provided in the secondary education programme as part of the necessary diversification of learning opportunities: it includes the teaching of technology, arts and crafts, practical courses of all kinds, work-experience programmes, and sometimes linking with local companies with a view to providing employment- related skills. In many countries we observe a convergence in the content of the courses provided in general and technical secondary schools as both emphasize basic communication skills, science, mathematics, and technology. As for specific employment-related skills, they seem best taught in the workplace or in vocational centres run in close partnership with the employers, who are encouraged to participate in the provision, the financing, the content of training and in the certification of the competencies acquired.

In a world in constant evolution, where knowledge quickly becomes out-of-date, education cannot be restricted to young people and last for a lifetime. School leavers and adults have to continue to learn to upgrade their knowledge or to change areas of activity. Much lifelong learning takes place in or through the workplace. Appropriate incentives systems as discussed above have to be put in place to encourage employers to provide such learning opportunities. Other incentives have to be devised for adults. One of them is the possibility that acquired skills be recognized through appropriate assessment and certification practices. "It is important to make it possible for acquired skills, especially in the course of people's working lives, to be recognized not only in the workplace but also within the formal education system" (Delors, 1996, p. 138), so that people can re-enter the education system. Although lifelong education has broader objectives than mere professional ones, it is for an individual the best guarantee against long-lasting unemployment.

2.5 Defining new ways of intervening and finding partners

Budgetary constraints make it necessary for the government to share the burden with the beneficiaries. Apart from the overall capacity of government to contribute, two criteria come into play when deciding on the level of government intervention: efficiency and equity. According to the efficiency criteria, as long as education continues to yield benefits to society that go beyond private benefits, government intervention is justified: this is the case in basic education, which can last according to the country concerned five, six, nine or twelve years. It is also the case in those areas where there is under-investment in education or training as, for example, in industrial training, scientific or engineering studies, because of the high capital investment involved. Other studies, on the other hand, should increasingly be paid for by their beneficiaries, the enterprises or the individuals, through fees, deferred payments (loans), etc. ... According to the equity criteria, government subsidies should be

supporting under-privileged groups, and all those who, although they would have the capacity to continue their studies, cannot afford to do so[2].

Following such criteria, countries have introduced cost-recovery measures at different levels of their education system. The development of a private sector is often being implicitly or explicitly encouraged. In most countries the government continues to play a major role in the financing of initial education but it increasingly tries to share the responsibility in the financing, management and provision of education and training with others who become partners. Such partners include, as discussed above, decentralized levels of public administration (provinces, local authorities, municipalities), parents, communities, NGOs, religious associations, enterprises and federations of employers, trade unions, and youth associations.

The reasons for forming such alliances go well beyond the need to find new sources of finance: they have to do with the recognition that in a democratic society parents and other members of the civil society should have something to say in the education of their children and youth; that public institutions, particularly if they are centrally administered, have largely failed to adapt their content and approach to specific groups of children: they are incapable in particular of dealing with difficult or marginalized groups. It is also a recognition of the fact that the state alone is unable to solve such major problems as unemployment, or poverty: only the mobilization of the different forces existing in society can help in tackling such issues. When it comes to training, most state controlled institutions have proven unable to respond quickly to the specific and fast changing requirements of the labour markets. Consulting the economic players at the local level, involving them in the management of training institutions and organizing courses according to demand is increasingly becoming a substitute to working out estimates for the short- or even medium-term, although this approach also has its limits (De Moura Castro, 1995).

Given that the state can no longer, and should no longer, finance and manage all institutions, the promotion of partnership constitutes an intermediary stage between a totally state-managed and controlled system and a totally market-regulated system: it allows combining the efficiency and flexibility that the private system can offer with the maintenance of certain collective values and goals, such as equity, that only the state can ensure. The provision of education and training is increasingly being delegated while the state continues to finance it, partially or entirely, plays a major role in curriculum development, in teacher training, in the certification and in the definition of standards.

2. It should be stressed that the efficiency and equity criteria quite often converge. Not allowing able pupils to be educated or trained is a waste of human resources; not educating and training disadvantaged youth has a cost and can lead to violence and social unrest.

Granting a large amount of autonomy to public educational institutions and training centres, and giving grants to private institutions all constitute attempts to combine the advantages of public funding with private management.

Some countries have tried to introduce competition between public and private institutions by encouraging students' free choice of schools and by attributing the resources to pupils rather than to schools. In such a system, which privileges demand rather than supply, government money follows the child: only the best schools – those which attract students – receive the resources. The impact of such measures still needs to be fully evaluated, however, particularly in developing countries. It assumes that all pupils, regardless of their social background, have a choice and that they are well informed. Such an assumption may not be validated on the ground, however, as experience shows that the upper-middle and ruling classes are generally more informed and know best how to take advantage of a system. How schools have responded to such incentives, in terms of improving the quality of their teaching, and the impact of such systems on small rural schools needs to be checked: if, unable to compete with urban and private schools, small rural schools are condemned to closure, or lose their best pupils, disparities between social groups might actually increase.

Experience shows that where private schools are financed through tuition fees only, disparities between social groups increase; where they are financed by the state through a system of grant-in-aid or vouchers, disparities remain. The best private schools continue to attract students from more advantaged backgrounds: in some countries, a real hierarchy can be established which goes from totally private and a few élite public schools, grant-aided private schools, to other public or municipal schools attended by rural pupils and children of a lower-class of social background[3]. The first group, thanks to better resources, better management, and an important peer-group effect tend to have much better results (Jimenez *et al*, 1991; Espinola, 1994). Such is the case in Chile where the more autonomous private schools tend to be more responsive to students and to their parents. Their greater flexibility in terms of teacher recruitment and contracting also allows them to be more cost-efficient. The solution, however, is probably not to increase the level of control over public schools, but rather to give them even more autonomy so that they would be in a better position to compete with the private sector. Another solution, of course, would be to provide vouchers only to disadvantaged children, as is being done in Colombia, letting others pay for their education.

3. In other countries, the worst schools can also be private, profitmaking or community schools.

In all cases, the state has an important role to play. To describe its new role, a comparison has often been made with the management of a private corporation which combines centralized policy formulation and control over budget allocation, with devolved authority to relatively autonomous sub-units, administering the policy and determining local priorities and budget, according to market requirements (Bienayme, 1989). "Tools for obtaining compliance with policy objectives include corporate planning, quality assurance processes, performance indicators and ... evaluation mechanisms" (Henry, 1996). In education, the state is responsible for defining the policy, leaving it to decentralized units, local authorities and institutions to implement it, but controlling the degree of implementation through a mix of regulatory and deregulatory mechanisms as well as incentives.

3. The consequences for educational planning

In an environment such as the one we have described, what could be the purpose, utility and scope of educational planning? In traditional centralized planning, a group of planners working at the central level identifies the key problems on the basis of a thorough diagnosis, makes projections of enrolments, teacher requirements and expenditures, assesses different policy options and strategies and presents them to the policy-makers for decisions, and later on translates the plan, once approved, into a number of programmes and projects, as well as monitoring their implementation. Is traditional planning out-of-date?

To start with, reforms and policy changes rarely comply , if they ever did, with the calendar of the plan's preparation: every five years. Policy changes are more likely to take place when a major political change, or even a change of minister occurs, under international pressure (such as through the results of a big conference like Jomtien), or under the pressure of a funding agency. Second, rational linear centralized planning has often proven incapable of successfully introducing a reform at the ground level and sustaining it, due, among other reasons, to a lack of involvement and empowerment of key actors. Third, the multiplication of players and levels of intervention inside and outside the country contributes to limiting the value of any planning exercise conducted by only one of the actors, even as predominant as the state.

Following the Jomtien conference, many developing countries have committed themselves to making primary education universal by the beginning of the next century, and they are backed in their efforts by the donor community. This commitment has in a way put back on the agenda some of the most traditional and well-established instruments used in planning. Primary and, in some countries, secondary education cannot be generalized over such a short period of time without preparing enrolment projections, forecasting the number of teachers to be trained, analyzing the cost implications, preparing budgets, and carefully planning the

location of schools. Plans have become rolling plans being periodically updated to take into account the latest developments. More and more planning activities are also taking place at lower administrative levels. Much remains to be done, however, in terms of policy implementation, raising attendance, promoting demand, motivating teachers to teach better and to innovate, administrators to manage education more effectively, etc.

In the new context, where the state is delegating a great deal of managerial responsibility to local governments, administrative units and institutions, and where it runs the system in partnership with so many actors, educational planning does not disappear: it is carried out by different operators and at different levels, at central, regional and municipal level, as well as at institution, school or university, level. The focus, and the scope of educational planning is changing however.

The need for a general forward-looking perspective in education at central level becomes very important as the efforts of the different providers have to be co-ordinated. Precisely because the future is so uncertain, it is necessary to organize a surveillance, a sort of 'technological watch', identifying the recent changes or trends likely to have considerable importance in the future and that education should address. Precisely because financial resources are scarce it is necessary to use the existing resources in the most efficient way; it is also necessary to convince as many players in the society as possible of the need to invest in human resources and to encourage them to view the future in a similar manner. Finally, it is because there are so many different partners involved in the organization, financing and delivery of education and so many autonomous centres of decision making, that it is imperative to offer a globally coherent framework, and co-ordination mechanisms ensuring that the ultimate goal of improving the achievement level of the largest possible number of children is actually reached.

Education and human resource development is a long-term investment which requires stability and continuity over a period of time. Unlike material investment, investing in human capital is not a one-shot operation and for many of the efforts undertaken to bear fruit, they need to be protected from undue fluctuations. Providing a long-term view of education to which the various players can subscribe is one of the ways in which such continuity can be provided.

The new educational planners working at the central level see their tasks as primarily : (1) contributing to defining a policy which will allow the country to meet the challenges of the next ten to twenty years and preparing the decision-making process; (2) organizing the policy dialogue; (3) devising mechanisms of allocation of resources according to specific criteria congruent with policies and identifying appropriate partners; (4) devising the proper incentives and regulations so that the different providers and players take the most appropriate decisions); (5) monitoring the implementation of the policy, making sure that the systems evolve more or less in the right direction; (6) ensuring a transparency of

the educational markets; and (7) taking the appropriate compensatory measures as needed.

Contributing to the *process of policy formulation* implies exploring the future and building various scenarios of educational development. The purpose of such prospective work is to provide the basis for a political dialogue. As long as the decision is to expand educational opportunities and to provide more resources, it might not be too difficult to convince the different stakeholders of the soundness of the policy. More often than not, however, resources have to be reallocated, and a decision made on who (what level, which province, which group) is going to obtain more resources. Most difficulties and conflicts arise at this point: it becomes necessary to involve the stakeholders in the decision-making process and to negotiate, so as to reach an eventual compromise. This dialogue is more likely to be successful if it is based on a project, a shared vision of the future. The prospective analysis facilitates the process of concertation and negotiation with the different players, and reaching an *agreement on the different goals of education* and the ways to attain them.

Above and beyond the definition of these general goals, educational planning contributes to the process of policy formulation by identifying the critical areas and the various policy options which are available to address such problems, and by assessing the advantages and disadvantages as well as the financial implications involved. Problem identification requires the conducting of a thorough diagnosis. The *selection of appropriate policy options* is to be based on research and comparative studies; their assessment, on the other hand, requires careful costing, an analysis of the capacity of the current administration to implement them as well as a reflection on how such decisions would be perceived by the different players and their likely reactions. The selection of the policy measures is a political decision to be made by the policy-makers after long discussions with the different groups concerned. Broad acceptance of the strategies to be adopted, built on strong participatory processes, contributes to the sustainability of the decision made and its implementation by the various partners.

It emerges from the above that educational planning is just as much a political process as a technical exercise. The right decisions are not necessarily the best ones technically but the ones most likely to be accepted and implemented by all, or at least the majority of the stakeholders.

An important change which has affected the content of educational planning in recent years is the concern for *policy implementation*. As discussed above when reviewing the policy-maker's agenda, educational planners have to find ways and means of promoting demand, devise mechanisms to ensure that the level of quality is raised and that the achievements of all, particularly those of average or below average pupils, increase; that equality of opportunity and equality of results are maintained, taking whenever necessary corrective and compensatory

measures. They have to motivate, and negotiate with, the new partners; they also need to regulate the new educational market which emerges: this requires providing as much information as possible to users – through publishing data on individual schools, their conditions and performance, through habilitation of private schools and centres (making sure that they fulfil a certain number of conditions in terms of resources, staff, facilities, curriculum enforced), and through certifying the education or training provided (through a system of national examinations or through an *ad hoc* system of assessment of competency). They have to devise mechanisms for allocating resources which guarantee transparency in the way such resources are allocated as well as in the way they are used, providing for accountability mechanisms. Finally, they have to evaluate the policies so as to suggest readjusting if necessary.

Throughout this list of activities, the importance of having an appropriate information base stands out. Developing an adequate management information system to allow for the monitoring of the development of the education system, the information of the policy-makers and of the educational community at large, becomes a critical task. Conducting research to feed the decision-making process and allowing for informed decisions is equally essential.

Mobilizing the various players, and setting up an appropriate set of incentives and regulations to ensure that they take the necessary steps, decisions and actions to deliver the expected results is just as critical. Several suggestions have been made in the course of this chapter which illustrate the need to take motivations more into consideration and to move towards an incentive-based planning approach. The challenge is to design and select the appropriate tools for obtaining compliance with policy objectives.

Such tools are varied: they range from financial and fiscal incentives, to increasing self-image and status, to future promotion prospects (to motivate teachers); from opening access to future studies and jobs through certification of knowledge and competency to diversifying content and delivery systems (to motivate learners); from using examinations as a sanction or selection device to using them as a way to modify teaching contents and practices; from monetary to non-monetary incentives to regulations and sanctions. The choice between compulsory and regulatory measures as opposed to voluntary and promotional measures is of great importance. One can imagine that voluntary measures reached through participatory processes, negotiation and consensus would be more effective. As discussed above, it is more efficient to motivate and encourage players to take the proper decisions rather than force them to do something for which they do not feel concerned or responsible. Too many regulations can kill initiative. Drastic sanctions can discourage (for example, repetition may lead some pupils to drop out). Yet some regulations and sanctions cannot be completely dispensed with as the state remains accountable to citizens for the money

spent for reducing inequalities and for ensuring that proper actions that engage the future are taken. The proper mix between sanctions and incentives depends very much on each country's culture and history. The different types of incentives that can be used will be further discussed in the following chapters.

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Chapter 3

Behavioural incentives in educational management

Douglas M. Windham

1. Introduction

While the previous chapters have dealt with the concepts and context of incentive analysis for macro-educational planning, the emphasis here will be on the use of behavioural incentives within the management of education from the national to the institutional and classroom levels. Since the latter two sites are where most educational effects are actually generated, the purpose of most aggregate incentive policies are to create an institutional or classroom environment supportive of learning activities. While many of the concepts of incentive use are easily transferrable between the centralized macro-educational setting and that of institutions and classrooms, the latter is a more immediate management context and one where the relative advantages of centralized versus individual decision making are even less clear. In this chapter, the key management theories of behaviour and motivation will be reviewed. As should become obvious, the 'language' of incentive analysis is drawn heavily from the literature on how management can influence behaviour of employees to be congruent with institutional objectives.

In education, the analogy of subordinate administrators and teachers as 'employees' is relatively easy to accept, especially if placed in the context of participative decision making. Nevertheless, some may initially be made uncomfortable to see the manager/employee analogy extended to the teacher/pupil relationship. However, in terms of motivation theory and its application to the classroom, the following discussion should make clear that one of the key expectations we assign to teachers is to motivate their pupils to learn. And just as the effective manager recognizes that creating greater opportunities for self-motivation among employees facilitates organizational objectives, so teachers need to create learning environments where pupils motivate themselves and their peers.

The goal of educational managers at the institutional level is to achieve the social and system goals of education *plus* any additional objectives peculiar to the specific institution. To do this the managers

will need to understand more completely the existing motivation of their fellow administrators, teachers, and pupils (including the twin motivational components of values and capacities discussed in *Chapter 1*). Next, the managers need to assess their organizational ability to provide incentives and/or information either to exploit the existing motivations or to develop new motivational patterns among these groups.

This chapter will begin with a review of the general management literature on motivation and behaviour, emphasizing the traditional content and process approaches to the study of motivation. Next, an attempt will be made to draw together the major contributions of this literature into a set of incentive characteristics appropriate for use in education. While much can be gained from an understanding of the management literature on incentives and motivation, one must not forget that educational institutions are not readily analogous to factories or commercial enterprises (even when operated by the private sector) and are subject to different behavioural influences than are most business organizations. Finally, the chapter will conclude with a description of the management tasks of educational administrators and teachers who wish to utilize incentives more directly in their institutions and classrooms.

2. Theories of motivation and behaviour

In Kurt Lewin's (1951) classic work on motivation, he conceptualized behaviour as a relationship depicted by the following simple formula:

$$B=f(P,E).$$

Lewin asserted that behaviour (B) is a function of the interaction between the person (P) and the environment (E). In the language of incentive analysis, 'P' incorporates the values and capacities of the individual and 'E' includes the intended and inadvertent incentives that act upon the individual. While this recognition of the interactive duality of behaviour may seem obvious today, Lewin's contribution was a very significant one at the time because it forced managers to consider both the individual and the incentive structures in attempting to promote desired forms of behaviour. The recognition of the individuality of persons, and of their environments, remains a critical need in both macro-educational planning and institutional and classroom management today.

It is obvious, however, that before much can be done about the desire to influence behaviour, one needs to know not just the components of behaviour, but the relationship of those components. Lewin's formula must be given a specific form to indicate *how* the individual's motivation and incentives interact. Over the last five decades two major schools of behaviour have evolved to answer this question (Boone and Kurtz, 1992). The older school emphasizes the *content* of motivation, meaning it identifies the specific needs to which individuals respond in making

choices. The second school of behaviour stresses the *process* of behaviour and how this process can be influenced to serve the goals of the institution. The major criticism of the content theories of behaviour is that they help the manager understand behaviour but offer few guidelines about how to alter or influence that behaviour.

The most well known of the content theories is Maslow's (1943) hierarchy of needs. Maslow proposed that an individual's behaviour is not determined by a single influence or requirement but in fact depends on five distinct sets of needs which exist in a hierarchy of importance. At the base of this hierarchy are the physical and physiological needs related to human survival; next come safety and security needs, then love or social needs, ego or status needs, and finally self-actualization, self-realization, and self-fulfilment needs. It was Maslow's assertion that the needs at any one level must be satisfied before the needs at the next level become important determinants of behaviour. For example, physical needs take precedence over safety needs, and safety needs are more critical than ego needs, and so on through the hierarchy.

While appealing to many managers, Maslow's hierarchy has received much criticism because of the questions of whether a hierarchy of needs truly exists and whether the needs identified by Maslow are in the proper order of ascendancy. An important contribution of Maslow's work for incentive analysis, however, is that it emphasizes the differences among the conditions of individuals and the need to consider these differences when attempting to influence their behaviour.

For example, the incentives to which a teacher in a developed nation may respond can be quite different than for a teacher in a less advantaged setting. Participation in decision making and opportunities for advancement may be important concerns to the teacher who is assured of adequate pay and job security. These same influences may be much less important to a teacher receiving inadequate pay or who has not been paid at all for several months. Similarly, a pupil who has been well nourished and comes from a stable family environment may be motivated by opportunities and concepts of self-responsibility that have little if any effect on a child who is hungry or living in conditions that impose physical or psychological risks.

In addition to Maslow's hierarchy of needs, the three other major content theories of behaviour are attributed to Alderfer (1972); Herzberg, Mausner, and Snyderman (1959); Herzberg (1968); and McClelland (1961 and 1975). Alderfer's contribution, called ERG theory, reduces needs from five to three categories: Existence – physical and security needs; Relatedness – social and some status needs; and Growth – some status needs and the self-actualization needs. The major contribution of Alderfer's work is in asserting that these categories are better viewed as a continuum than as a strict hierarchy and the recognition that under certain conditions a 'higher' need such as ego or status may take precedence over a 'lower' need such as safety or security.

Herzberg's major contribution was the distinction he drew between behavioural influences as 'motivators' versus 'hygiene' factors. Motivators include the internal job-content effects which lead an employee to be satisfied or not with his/her employment. These are the more intrinsic job satisfactions of challenge and success. The job context or hygiene factors include the more commonly understood influences of pay, benefits, physical working conditions, and job security. The job-content factors have been shown to be critical in many occupations, and especially in education (Kemmerer, 1990), but not where positive context factors are absent. Thus, a challenging and interesting administrative job and the joy of working with students and colleagues may be a powerful incentive for teachers and educational administrators, but not in the absence of minimally acceptable pay, benefits, and an acceptable working environment.

McClelland regrouped individual needs into categories representing the requirements for achievement, affiliation, and power. Achievement needs relate to the desire to perform a task or assignment more effectively; affiliation needs reflect the desire of some individuals for close and collegial contacts with co-workers; and power needs indicate the desire of an individual to control or influence others. McClelland's research identified managers by the relative strength of these three needs and concluded that the managers high in the need for power and low in affiliation were the most likely to be successful. The transferability of this conclusion to a participative enterprise such as education is not obvious, but McClelland's work does stress that behavioural motivations can be identified and that, with proper incentives, they can be modified. The latter is terribly important for incentive analysis in that managers will need to utilize existing motivation but may also want to attempt to create new motivational patterns.

The process theories of motivation shift the emphasis from the needs that incentives must meet, to the means by which incentives can alter behaviour. The foundation for process theory was established by B.J. Skinner (1969 and 1971) in his work on 'operant conditioning'. The term refers to the ability to influence behaviours over which the individual has conscious choice, i.e. operant behaviours. By providing reinforcement in the form of rewards for positive behaviour, or punishments for improper behaviour, the subject is 'conditioned' to behave in a desired way. Obviously, in the extreme, such operant conditioning can be intrusive on the individual's free choice. In more common terms, however, it reflects a basic belief in the rationality of human decision making and a Benthamite form of pleasure/pain calculus where the individual's decisions reflect the anticipated costs and benefits of any choice.

An important aspect of Skinner's view of operant conditioning relates to the schedule of reinforcement. Workers who are paid on a 'piece-rate basis' receive positive reinforcement for each behaviour that is deemed valuable. This form of reinforcement is not realistic for most educational activities, however. In education, fixed-interval models of

reinforcement (recurrent evaluations, regular pay periods, and periodic salary reviews) are more common. If rewards are provided regardless of the work performed (as, for example, in across-the-board pay increases or tenured employment without recurrent performance reviews) then the desired behaviours either may not be produced or not maintained.

A special problem in education is the possibility of unintended disincentives. If a student is interested in learning but is told again and again to be quiet, his/her desire for learning may be stifled. If a teacher devotes extensive personal time to out-of-class activities, but is told that no salary differential is allowed between those who do the minimum and those who do more, the extra effort may disappear over time. If a university rewards research and scholarship, but not teaching and service, no one should be surprised to find that the instructors allocate a disproportionate amount of time to the activities for which clear rewards exist. Whether incentives are positive or negative, their effect on behaviour must be monitored to ensure that the realized effects of the incentives are in line with institutional objectives.

Six major conclusions relevant to incentive analysis may be drawn from the literature on operant conditioning:

(1) Managers (including teachers as instructional managers) must identify the nature of motivation and the values and capacity to change that will cause individuals to respond to different forms of incentives – also, managers must know how to communicate effectively the potential incentives for different forms of behaviour.

(2) Incentives must be closely linked to the behavioural change that is desired.

(3) Incentives should be provided in a continuum rather than in an all-or-nothing arrangement – higher levels of positive behaviour should receive higher rewards.

(4) Desired behaviours should be rewarded recurrently and in a probable pattern so that the link between behaviour and reward or punishment is clear – every positive action need not be rewarded, but the individual should understand the *probability* of being rewarded.

(5) The incentives must be provided along with feedback that informs the individual of what is being rewarded or punished and how one can avoid negative incentives and earn greater positive incentives.

(6) Incentives should continue only as long as the positive behaviour continues.

An example of the last point would be a reward system where outstanding performance in one year leads to a change in base pay rather than a one-time bonus. The present value of a recurrent pay increase would provide for a larger bonus; this in itself might cause a more

significant behavioural change given the larger psychological discount of future benefits among many individuals. However, a more serious problem is that the worker who receives an increase in his/her base pay will continue to receive that increase in the future regardless of his/her performance. A general rule is that once a reward is guaranteed, it loses its ability to affect new behaviours.

Obviously, at the extreme, operant conditioning gives rise to distasteful visions of 'brain washing' and of passive workers manipulated cynically by totalitarian managers. Used properly, on the other hand, incentives can provide a means for creating and nurturing effective administrator partnerships with other administrators and teachers, and for an interactive relationship between teachers and their pupils. In education, this can create institution-based decisions for reward systems that are generated jointly by management and employees.

However, certain traditions in education (for example, the common pay for teachers regardless of their academic specialization and market demand) are counter to even a collaborative incentive scheme. What is needed is for managers to determine what benefits must be provided for all workers, and then to work with their employees to identify specific exceptional behaviours which are to be rewarded, and how they are to be rewarded. Unfortunately, in many parts of the world, no differential incentives exist after the formal pay and benefits are allocated. In these contexts, managers must be especially creative to derive non-monetary means to motivate their staffs.

Expectancy theory, based on the work of Edward Lawler and Lyman Porter (1968) and Lawler (1973), is more a means of studying the dynamics of incentives than it is a specific theoretical perspective. This approach to understanding behaviour is predicated on four major findings of motivation research:

(1) individuals have relatively clear preferences among the choices that are available to them;
(2) expectations exist among managers that certain actions (incentives) will result in encouraging certain results (desired behaviours);
(3) expectations exist among workers that certain behaviours on their part will result in receiving certain rewards; and
(4) the actual choices that individuals make are a product of their preferences and their expectations.

The expectations of the managers and workers do not have to be guaranteed; more commonly they exist as probabilities. All workers may not respond in a certain manner to an incentive, but the manager should have a clear idea of the probability of the desired result among the population of workers. Similarly, the workers may not be rewarded every time they engage in a desired behaviour but the probability of being

rewarded must be sufficient to encourage them to maintain the desired behaviours.

In addition to the workers' preferences for different forms of reward (called *valences* in the expectancy literature), two important relationships must be clarified. The first is the 'effort-to-performance' expectancy. This is the individual's subjective judgement about the probability that he or she will achieve the level of performance necessary to be rewarded. The second relationship is the 'performance-to-outcome' expectancy. This is the individual's judgement about the probability that achieving a certain level of performance will have on gaining a reward (outcome).

Two examples from education can help illustrate the importance of these two relationships in determining behaviour. First, if a disadvantaged child perceives (correctly or not) that he or she has little or no chance of meeting minimal performance levels, this is a low effort-to-performance expectancy. The result can be that the student may abandon all effort at trying to reach these levels, resulting both in reduced learning and potential discipline problems. Second, if a teacher works very hard and does achieve the desired level of performance, but comes to realize that this makes no difference in the rewards received, this is a case of low performance-to-outcome expectancy. To motivate individuals, an incentive system must incorporate a high expectancy in both effort-to-performance and in performance-to-outcome. Because behaviour motivation is a *product* of these two expectancies, the probability of encouraging the desired behaviour is small if either of these two expectancies is low.

A special contribution of the expectancy 'theory' lies in its emphasis of the three components of behaviour – preferences, incentives, and monitoring. Incentive designers must know the preferences of the individuals whose behaviour they hope to influence, and must work to ensure that the expectancy probabilities are high. Both of these activities will be predicated on formative and summative monitoring and evaluation. Formative monitoring is needed to identify preferences and what can be done to increase the linkage between effort and performance, and summative evaluation to ensure that those who perform well are appropriately identified and rewarded.

A point of controversy in expectancy theory is the issue of how well managers can understand the preferences of their 'workers', whether the workers are administrators, teachers, or students. The answer is that this knowledge need not be perfect, but that it must be sufficient to allow the managers to design incentive systems that motivate an adequate number of workers to an extent necessary to achieve the desired levels of motivation. Several planning actions exist here. First, managers can attempt to determine what the existing preferences are. Second, managers can attempt to modify preferences by encouraging workers to value alternatives differently (appeals to team spirit and loyalty are common examples of attempts to encourage workers to value non-monetary benefits more highly). And third, selection and retention of workers can

be based on evidence that they respond to the incentives offered by the system or institution. In addition, as the expectancy model stresses, any efforts that increase higher effort-to-performance or performance-to-outcome expectancies will increase the effectiveness of the incentive system.

In the past several decades, organizations have come to appreciate the role of intrinsic rewards such as job satisfaction, status, and self-fulfilment as playing a more important role in incentives. Such effects rarely compensate for the lack of extrinsic rewards such as pay and benefits, until the extrinsic rewards reach a minimal level sufficient for support of workers and their families. However, as a complement to these basic needs, intrinsic benefits increasingly are recognized as important. Unresolved is the question of the long-term interest in and benefits to be derived from participative structures. Teacher participation in administrative decisions and pupil participation in classroom decisions can be a motivating incentive, but only if the perceived benefits of that participation exceed the costs.

Another important factor in preferences is the judgement of equity in rewards (Adams, 1965). Since fairness is inherently subjective, using equity as a positive incentive force requires substantial effort – especially to convince the less-rewarded individuals that their condition is an equitable one. However, perceptions of inequity in rewards will reduce the workers' performance-to-outcome expectancy and can have counter-incentive effects on motivation. And yet, equal rewards will almost always be an inappropriate way to respond to unequal performance. Equity must be a concern of managers both because it is the 'right' thing to do and because it is the efficient thing to do. Defining equity and convincing workers of its appropriateness are two important and under-emphasized incentive issues in most education systems.

A third process theory of motivation is goal setting. In goal-setting theory, it is asserted that the act of establishing goals is itself a source of motivation to achieve those goals. There may be a question of causality in the research, however, since the finding that high achievement occurs most often in those with clear goals, may be a result of high-performance individuals establishing goals for themselves, or at least being more cognizant of goals for their performance. Even so, the educational performance standards movement that has been so influential in Europe and the United States of America is based on a rather obvious premise: without goals there can be no sense of direction in planning and no clarity of success or failure in evaluation. Since both planning and evaluation are critical requirements for any attempt to motivate through the use of incentives, goal setting will have to be a part of any incentive-based planning exercise.

The most serious criticism of goal-setting theory in education would be that most systems and institutions have goal statements but these goals may either be excessively vague, thus not operational in measuring progress, or not clearly linked to the resources, expenditures, or

professional activities of these organizations. The past three decades have, in fact, seen an extraordinary increase in the number and variety of goals assigned to the education sector, without any concomitant increase in the resources provided with which to attain these goals. When goal setting devolves from a technical planning exercise to a cynical political activity, it can no longer be expected to have a positive effect on behaviour. Many educational institutions may have a lower effort-to-performance expectancy now, simply because their new goals so far exceed their capacity to perform given available resources.

To summarize, the main insights to be gained from the process theories of motivation are:

(1) individuals must have confidence that they can meet the performance expectations set for them;
(2) there must be recognition that a high probability exists between performing well and being rewarded in a form that one values;
(3) managers must understand the preferences (intrinsic and extrinsic) of those they wish to motivate and be prepared to assess performance effectively and reward performance equitably;
(4) high expectations and goal-setting exercises will have positive effects only when the expectations are realistic and the goals are realizable; and
(5) participation in decision making about incentives and rewards by those one wishes to motivate can have positive effects.

Much of this may appear as common sense; this is not an unusual situation in the management literature. The challenge for educational planners is to go beyond the obvious to design and implement incentive strategies that will change behaviour in ways that work to realize educational goals both for society and for the multitude of individual participants. It is this multiplicity of individual contexts and preferences which is the ultimate challenge to educational planning at any level.

As diversity within a structure increases, the less likely it is that a single unified system of incentives will suffice. In every country educational diversity is increasing. There are more forms and levels of education, new forms of delivery are evolving as communication technology evolves, and there are many more types of participants. As to the last, most education systems and institutions no longer recruit their students from a narrow socio-economic group. Differences in culture and language are common in many countries, as are the effects of programmes of inclusion for disadvantaged and handicapped or disabled students. All of this diversity means that the creation of incentives must be more carefully planned and monitored and that different sets of incentives may be required for different settings or groups.

While diversity poses severe challenges to the creation of a unified incentive system for all participants, incentive analysis itself offers one of the best means by which the complexity of diversity can be met. The ability to send clear signals about expectations and priorities gives the incentive planner the ability to adapt to differences while, at the same time, assuring that those common goals that do exist are not sacrificed. Rather than different goals for each sub-group, incentive analysis allows society to have different paths by which the common goals can be attained. When coupled with greater use of decentralized and individual decision making, incentive analysis can be seen to be one of the most effective vehicles for linking the appropriate goals of central authorities with the specific conditions of diverse localities and individuals.

In the following section, a summary on the management of incentives for motivation in education will be presented incorporating the content and process theories discussed here. This chapter will then conclude with a description of the specific functions of education managers in designing, implementing, and sustaining an incentive-based education management system.

3. Characteristics of educational incentive systems

The conclusions to be drawn from the broad literature on motivation and incentives can be summarized for education as follows:

(1) rewards must be seen to be relevant and sufficient;
(2) the incentives must recognize the difference between basic and higher-order needs and the basic needs must usually be met before other needs can be exploited for motivation of new behaviours;
(3) there should be a focus on positive rather than negative aspects of incentives;
(4) participation in designing and implementing an incentive system should be encouraged from among those whose behaviour is to be modified;
(5) group cohesiveness can be a means to reinforce positive incentives;
(6) incentives should be individualized to the greatest extent possible given the nature of the education organization;
(7) diversity should be identified and adapted with a proper balance between general standards and individual and sub-group needs;
(8) equity in rewards should be clearly defined, monitored, encouraged, and explained;
(9) incentives should reward excellence, but the incentive system should also remedy weaknesses;

(10) conflicts among incentives should be identified and countervailing influences should be minimized, if not eliminated;
(11) administrators and teachers should be clear about goals and realistic about expectations;
(12) participants in an organization should be recruited, selected, trained, and retained based on the complementarity of their motivation to the incentive system of the organization; and
(13) an incentive system must stress clear policies, recurrent evaluation, and consistent and frequent rewards.

Each of these characteristics of an educational incentive system will be discussed briefly in turn.

The relevance and sufficiency of incentives are required if the incentives are to have their desired effect. The relevance of incentives refers to how well the incentives fit the needs and preferences of the individuals to be influenced. The sufficiency of incentives has to do with whether the stimulus of the incentive is adequate to cause a change in behaviour. A teacher may be interested in monetary rewards but, if the reward is too small, it may still have no effect. In the same way, a student may care about the teacher's praise, but if such praise is weak or infrequent, little effect on pupil performance may result.

The recognition of the primacy of basic needs should be a core value in any incentive system. An excessive emphasis on appeals to ego, self-actualization, and other higher-order needs may prove totally ineffective if basic physical and safety/security needs are not met. Non-monetary motivation can be effective but only for those individuals for whom monetary needs have been satisfied at some minimal level.

Focusing on positive incentives may appear meaningless given the earlier assertion that all incentives incorporate both positive and negative aspects. Ending a sanction or punishment may be seen as a positive incentive, while ending a reward is likely to be perceived as a negative one. Even so, the psychology of emphasizing positive outcomes should be preferred because of the more positive relationship it creates between the parties. Administrators and teachers who are viewed as the source of rewards are likely to be more effective in the long run than those seen only as a potential source of punishment. This is not to argue that explicit sanctions should not exist; it does argue that the major thrust of an educational incentive system should be reward- rather than punishment-oriented.

The role of participation of workers in organizational decision making is one of the aspects of management the West has borrowed from the Asian, and particularly the Japanese, experience. The openness of administrators to teacher participation and of teachers to pupil participation in decision making has received great attention within education around the world. The nature of participation in educational institutions should be one that maximizes the openness to ideas and

information, but maintains a realistic understanding of accountability and authority. A university president or rector, a director of an education system, an institutional administrator, and a teacher in the classroom must be understood to have special authority to make the final decisions on critical matters of incentive policy. However, effective decision making should incorporate participation whenever practical. Also, delegation of responsibility should not be initiated unless one is prepared to accept the concomitant delegation of authority.

Where possible, the incentive system should be structured around the shared norms of the group and the system should attempt to create and reinforce group cohesiveness. If official incentives for performance are offset by peer disincentives in the form of low norms and criticism for extra effort, the official incentive system may be compromised. Values of the group and the forms in which the group encourages these values among its members are determinants of how the incentive system must be designed and implemented.

Wherever possible, the incentive structure of an education organization or system should provide for individualization of the rewards and penalties. Rewarding or punishing within a group may be necessary, given the above discussion of group cultures. However, the consistent application of incentives on a group basis will weaken the perceived link between performance and outcome and eventually will result in a less effective pattern of behavioural adaptation. Also, individualization of incentives recognizes the diversity that exists within any group of individuals. Maintaining the proper balance between generic standards and adaptable incentives and between group cohesion and the recognition of individual performance is one of the great challenges in design and operation of any set of incentives.

Part of the issue of diversity is how the incentive system identifies and adapts to different forms of diversity. Issues of gender, socio-economic, and cultural (including language) differences dominate a large part of the literature. But administrators must be alert to differences in attitudes and values just as teachers must adapt to students with varying levels of intellectual capacities and different physical and emotional needs. The effective operation of an incentive system requires the identification of those forms of diversity which must be explicitly incorporated into the incentive structure. The ability for individual administrators to do this is a capacity that requires development in every nation.

A final diversity issue for incentives is the need to define equity and monitor, promote, and explain it. Individualization of incentives within a context characterized by a diversity of individuals must raise the question of whether the inevitable differences in rewards are fair. An equity standard should be asserted, perhaps as a result of a participative process of dialogue. Once defined, there needs to be a formal process of monitoring incentive outcomes to determine if equity is being achieved and, if not, interventions will need to occur to promote equity. Since

equity is inevitably a subjective judgement, administrators and teachers need to explain why differences in treatment are justified. Their success in this effort will go far to determine how well the incentive system is accepted and how it will be sustained over time.

An incentive system cannot exist solely as a means of rewarding and punishing desired and undesired behaviours respectively. Over time, the purpose of the incentive system is to alter the behaviour of all participants in a positive way. This means more than simple reinforcement of encouraged behaviour. To be successful an incentive system must create opportunities to remedy failure, not just reward success. An individual's failure to perform satisfactorily can originate in either the improper motivation of the individual (values and capacities) or in the opportunities provided for the individual to use his/her abilities properly. The educational administrator or teacher should attempt to instil positive values, enhance existing capacities and develop new ones, and ensure that all individuals are given appropriate opportunities to perform effectively. If this effort at remediation does not occur, then the incentive system will reinforce failure just as much as it will reinforce success. Without proper monitoring and feedback, the incentive system itself cannot fulfil either its reward or remediation functions.

The designer and implementor of an incentive system must always be alert to the possibility of countervailing incentives. These counter-incentives to those desired may originate in the individual's own motivation or may be the result of competing influences. For example, a pupil may fear that high academic performance is irrelevant to him/her because he/she has not learned to value education. Or a student may feel that high performance will make him or her unpopular with classmates or other peers. For teachers, countervailing incentives may originate from their desire to maintain strict discipline versus the institution's goal to promote learning and creativity. Similarly, in cases where teachers must maintain other employment, the incentives of the education system may frequently conflict with those of the other employer. No easy solution exists in cases of conflicting incentives, but the planner must be aware of the conflicts and design the incentive system so as to minimize the potential negative effects from these conflicts. Planners need to do a much better job of ensuring that their own incentive structures do not involve internal conflicts.

Administrators and teachers must be clear about the goals of their incentive system and realistic about the expectations for performance. Employees or students cannot respond to incentives that they do not understand or to incentives they do not realize even exist. The actions which are to be rewarded (or sanctioned) should be clearly defined as early as possible. Next, the required 'level' of performance should be stipulated; it is here that realistic expectations are important. If expectations are too low, then the incentive standard will not have much of a motivational influence because participants will achieve it without much change in their present behaviour. If expectations are too high,

however, many individuals may feel they have no chance to attain the required standard and, again, the incentives will not affect behaviour broadly. The goal-setting theory of motivation does suggest that goals are important. An incentive system must go beyond this and assure that the goals are understood and that performance standards are both clearly defined and realistic.

Incentive discussions often accept the participants in the incentive system as a given fact. This may be true for a point in time where the students, teachers, and administrators in any educational activity are already in place. However, if one considers the operation of incentives over time, there is an opportunity to adapt the organization to the incentive system, not just vice versa. Organizational adaptation over time occurs through the recruitment, selection, training, and retention of staff who 'fit' the organization's incentive structure. Education organizations often recruit individuals who have a high preference for intrinsic benefits in the recognition that the extrinsic benefits available may not be competitive with other opportunities. An affection for and dedication to children was once a primary consideration for many teaching positions for this very reason. Religious schools will recruit teachers that share their values and secular private institutions will often do the same. Training and retention procedures are also means for adapting personnel to available incentives; if the training is unsuccessful, then a decision may be made not to retain an individual. Unfortunately, the employment guarantees common within education organizations and the inadequacy of resources for pre-employment screening and training have resulted in this process of adaptation being under-utilized.

Even students may be matched with specific institutions and programmes because of their values and capacities. Special focus institutions (emphasizing arts or science training, for example) exist in the public sector in many nations precisely because of this desire to recruit individuals who match the values and opportunities offered by the institution. Similarly, within institutions, special honours classes and other forms of educational tracking again differentiate among students and try to place them in an incentive context responsive to their values and capacities. Increasingly, there is also a recognition that educational values developed in the early years of schooling can either facilitate or constrain incentive effectiveness later. Greater attention must be directed to the earliest learning activities of children, and especially to those whose family environments are not conducive to positive educational values.

Finally, and as a summary of much of what has been mentioned above, an incentive system must have clear goals and policies, recurrent monitoring of behaviour, and consistent and frequent reward interventions. What has not been mentioned is that an incentive system will be only as good as its goals and only as effective as its implementors. Incentives are themselves neutral; they can be used to reinforce behaviours of any type. An educational institution that is racist or antagonistic to other forms of human rights can still use incentives to

reinforce what it deems as 'proper' behaviour. Also, even if the goals of an institution or classroom are ones one can agree with, the effectiveness of incentives will depend on the skill and sensitivity of the individual administering the incentives. All managers use incentives but all managers do not use them to great or positive effect.

This recognition that incentives are an inherent process in all organizations is critical. The purpose of this chapter, and more generally of this volume, is not to argue for the use of incentives. It is to argue for their explicit use in ways that serve the social and individual needs that are the foundational justification for education: the development of individual capacities and values, the creation of more effective citizens and more productive managers and workers, and for a greater equity in the allocation of opportunities and the generation of benefits in all endeavours.

4. Responsibilities of the incentives manager

Given the above arguments for improved incentives-based management, the issue that remains is how the educational planner (from central national authority to individual classroom teacher) conducts the incentive system. Incentive managers must engage in a cycle of five major activities:

- Analyze the motivation of participants.
- Design an incentives structure.
- Provide information on the incentives.
- Monitor the behavioural effects of the incentives.
- Adapt and redesign the incentive system.

Each of these five functions will be briefly reviewed since detail on each point has been provided in the earlier discussions.

Analyze the motivation of participants. Incentives will not work unless they match with the values and capacities of the participants in the incentive system. A major distinction between a planned incentive structure and the incentive process inherent in all activities is the formal effort to fit incentives to motivation. An important component of this analysis is whether the incentive system will be monolithic (the same incentives for all participants) or will explicitly deal with diversity within the participant population.

Design an incentives system. The design of the incentive system, once the major behavioural motivations have been decided, requires decisions on the behaviours to be rewarded or sanctioned, the standards of performance that will initiate an incentive response, and the nature and degree of the awards or sanctions to be applied. Identifying the proper motivation, but then establishing the wrong standards or inadequate responses, will not lead to the desired behavioural adaptation.

Provide information on the incentives. Based on the earlier assertion that participants cannot respond to incentives that they do not understand or do not realize even exist, a critical responsibility of the incentives manager is to see that information on the details of the incentive system are fully disseminated to the participants. An incentive reward or punishment must be clearly linked to a specific performance of behaviour; uncertainty of linkages and unpredictability of responses will undermine the incentive system's effectiveness.

Monitor the behavioural effects of the incentives. Once in operation, monitoring becomes one of the crucial activities of the incentives manager. The initial incentive system may focus on incorrect interpretations of participant motivation, may incorrectly identify expected performance levels, and may not create adequate linkages between behaviours and rewards. In each case monitoring will allow these shortcomings to be identified and for the incentive system to be adapted.

Adapt and redesign the incentives system. Based on the monitoring results, the incentives manager should begin the process of evolving an improved incentive system. Changes in the incentive system should be made only as necessary because change itself implies a cost in terms of the certainty of responses and the clarity of the links of behaviour and reward. However, recurrent improvement in the incentive system allows not just refinement of the original structure but allows the incentive system to adapt to external changes in the nature of participant motivation and the availability of incentives to be allocated. Incentive systems must be able to evolve over time to adjust to these changes.

These initial three chapters have introduced the concepts and terminology of incentives and have attempted to show how the incentive methodology has relevance for educational planning and implementation from the macro-educational extreme of the national planner to the micro-educational extreme of the interaction of an individual teacher and student. In the next section, incentive analysis will be applied to a selection of educational issues to indicate in more concrete terms how incentives do operate in education and, more importantly, how their operation can be made more effective in meeting social and individual objectives.

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Chapter 4

State/local partnerships in financing basic and secondary education

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1. Introduction

While the merits of the centralization versus the decentralization of basic education continue to be debated in academic and political arenas, governments the world over have quietly repositioned themselves on the centralized/decentralized continuum for quite pragmatic reasons. In developing countries, movement towards decentralization has been dictated by the inability of government to keep pace with systems characterized by rapid horizontal and vertical expansion; even as access has expanded, the number of grades offered has also grown. In such cases, even where decentralization is not explicit policy, it is a fact dictated by the very real need for local resources, defined in terms not only of money but of governance/oversight capacity. At the same time, developed countries have moved from both centralized and decentralized ends of the continuum to more intermediate positions in an attempt to improve efficiency while maximizing equity. As a result, few countries remain at the extreme points of the centralization/decentralization continuum. Most, in fact, are quickly adjusting policy to reflect the realities of multi-level systems, in which central and regional governmental authorities and local communities all have distinct roles and responsibilities (Kemmerer, 1991, 1992, 1994).

While the roles and responsibilities of each level vary, and vary at times quite dramatically among countries, the central or regional levels often attempt to reserve to themselves dominance over policy, broadly defined, and through policy, standards of practice. Theoretically, at least, this is achieved by a combination of financial incentives and regulations or mandates. The actual level of central or regional funding, of course, may vary from full state funding to multi-level funding partnerships but one thing is for certain: "authority does tend to gravitate toward the source of financing – paying the piper does appear to give one at least the right to suggest the tune" (Windham, 1993, p. 29). In short, governmental

willingness to financially support schooling is closely related to its *de facto* if not *de jure* right to guide educational development.

The purpose of this chapter is to explore the potential for equity and efficiency in the provision of education afforded by this combination of mandates, incentive financing, and local initiative. To this end, the merits of general versus categorical aid are discussed, the effects of formula adjustments described, and the major issues related to current practice presented. Finally, the next steps in reforming aid programmes to exploit fully their incentive value are discussed. Before turning to these topics, however, the major types of basic support programmes are described. This description draws heavily from the North American experience both because of the availability of detailed data and because the long history of state/provincial responsibility for education, combined with deeply-rooted traditions of local control, has resulted in a level of experimentation with multi-level partnerships that is unparalleled in the rest of the world.

2. History and philosophy of grants-in-aid

Historically, the philosophy of state grants-in-aid has been expressed in formulas, and accompanying regulations, that define, explicitly or implicitly, the state/local responsibilities. The five general types of formula aid are flat grant, foundation programme aid, resource equalization aid, full state funding, and voucher plans.

In North America, state/provincial subvention of basic and secondary education, which typically began in the nineteenth century well after local schools had been established, was designed to promote access and increase the length of the school year. The state subsidy to local government was an incentive to start new schools and to keep their doors open. Generally, this subvention took the form of a *flat grant* per task unit (defined as pupils or teachers). The flat grant frequently represented a small percentage of the cost of schooling and the balance was raised first, in the early years, by rate bills, other student fees, and charitable donations and, later, by local property taxes (Burrup, Brimley, Garfield, 1996). The philosophy underlying this early flat grant approach was that schooling is the responsibility of the locality but that the state has a fundamental interest in ensuring that sufficient amounts of schooling are provided and that schooling is provided to all, regardless of family circumstances (Guthrie, Garms, and Pierce, 1988). These flat grants per pupil are distinguished by their philosophy from the block grant schemes currently used by several states and Canadian provinces that are intended to contribute significantly to the costs of the state/provincial-defined minimum school programme.

By the mid-twentieth century, growing understanding of the social benefits of schooling and the inefficiency of the flat grant system (which gave equal state/provincial dollars to local education agencies regardless

of their access to other resources), resulted in a fundamental shift in the philosophy of state aid. Many states and provinces moved from a flat grant to a *foundation programme* approach. The foundation programme explicitly recognizes a joint state/local responsibility for financing schooling. Viewed from the state's perspective, this approach constitutes acknowledgment that the state/province could not ensure a minimum level of provision without providing substantial financial incentives financed by appropriating a portion of the local property tax (Guthrie, Garms, Pierce, 1988).

In a foundation programme, a foundation level (the incentive level) is set representing the expenditure per pupil necessary to finance a minimum or basic educational programme. Rather than basing this 'minimum' on the actual cost of effective implementation of the mandated programme in a locality, it is often based on the expenditure of the 'key' district (usually an average wealth district). Local Education Authority (LEA) participation in the programme may require a local minimum tax effort or a minimum expenditure level. In LEAs where the local tax effort does not yield the foundation amount per pupil, the state makes up the difference. For example, if the tax rate in LEA X yields $900 per pupil but the foundation level is $1,500 per pupil, the state would provide LEA X with $600 per pupil so that all districts in the state levying the minimum tax rate would spend at least $1,500 per pupil. Since levelling up poor LEAs to a reasonable foundation level often requires vast resources, the amount the foundation level is set at is generally dependent on the state's willingness to recapture and redistribute local tax yield in excess of the foundation level. For obvious political reasons this 'Robin Hood' approach, which takes money away from wealthy LEAs and gives it to poorer ones, is almost never enacted. The State of Utah is the only state that recaptures funds but the mandated tax rate is so low that in 1994-1995 only two of the state's 40 districts exceeded the foundation level and were subjected to recapture (Burrup, Brimley, and Garfield, 1996). The characteristics of this programme suggest that its use as an incentive mechanism to ensure minimum provision may be constrained by setting the foundation level too low (relative to the real cost of provision), not requiring a minimum local tax effort (or setting the required tax rate too low), or failing to recapture excess yield. It should be noted that recapture becomes less important as the foundation level approaches the cost of the state-mandated programme.

In the past 25 years, a new set of finance programmes espousing yet another philosophy has made its appearance in the United States of America and Canada. These are labelled generically as the district power equalizing or *resource equalization programmes*. Formula variants include percentage equalizing, guaranteed tax base or yield, or power equalization plans. All the variants retain the foundation programme's emphasis on the state's role in fiscal capacity equalization but enhance the LEA's role in fiscal decision making. The philosophy underlying this

approach is that localities should have the right to determine their educational goals and the nature of their programme offerings, but their educational expenditures should be a function of the wealth of the state as a whole rather than the wealth of the locality. The resource equalization approach thus abandons the unit cost method of measuring the educational task (that is, the number of students or teachers) in favour of a locally determined programme. The state agrees to pay a share of the per-student cost of the local programme budget in inverse proportion to the wealth of the district (determined usually by the ratio of local wealth to key LEA wealth).

The percentage-equalizing formula, the earliest of the variants, defines the state share as the percentage of the school budget the state is willing to support in a district of specified wealth. Thus, for example, the state might make a commitment to pay 50 per cent of the local school budget in average wealth districts. Such a formulation would imply that the state would support a greater share of the budget in districts of lower-than-average wealth and a smaller share in districts of above-average wealth. In a guaranteed tax-base approach, the state guarantees a given tax base. Each LEA's aid per pupil equals the difference between what their tax rate would yield on the guaranteed base and what it would equal on their own tax base. For example, if the average or key tax base is $200 000 per pupil and the district tax rate is 2 per cent, then the yield would be $4 000 per pupil. If the district's actual tax base was only $100 000 per pupil, the state would contribute $2 000 per pupil which, combined with the local yield, would allow the district to spend $4 000 per pupil.

Power equalizing, the most transparent of the variants, equates a specific level of tax effort with a particular yield, that is, the yield that such an effort would realize in the 'key' LEA. For example, if the key LEA wealth equalled $200 000, the following tax rates would be equated to the associated yields (Guthrie, Garms, and Pierce, 1988, p.139).

Local tax rate	Guaranteed yield per pupil
0.5%	$1,000 (.005 x $200 000)
1.0%	$2,000 (.01 x $200 000)
1.5%	$3,000 (.015 x $200 000)
2.0%	$4,000 (.02 x $200 000)

Obviously, with very few assumptions, it can be shown that the resource equalization variants are mathematical equivalents.

While the philosophy of local determination underlying these resource equalization approaches differs markedly from that of the foundation programme, the effects in terms of per-pupil aid to LEAs are often the same. This is true for a number of reasons. First, policy-makers are not likely to commit the state to a share in an unknown district-defined budget for fear of "wholesale raids on the state treasury" (Guthrie, Garms,

and Pierce, 1988, p.140). Second, this fear has meant that in practice government places a cap on the amount of spending per pupil it is willing to equalize. As long as the level of spending at the cap guarantees provision of the state mandatory programmes, this is not a problem. The problem arises because the per-pupil cap is often below the average expenditure in the state (it must be added, however, that the equivalency of even average expenditures to the provision of the mandated basic programme is largely unknown). And third, without the political ability to garner and redistribute excess local yield, the resources necessary to raise the cap are not available (Guthrie, Garms, and Pierce, 1988).

The fourth major approach to aid is *full state funding*. Full state funding is based on the philosophy that education is a state/provincial responsibility and must be made available to all the children of the state/province on an equal basis, regardless of both the wealth of their community *and* the preferences of their parents and neighbours for education. In contrast to the resource equalization approach, full state funding emancipates educational entitlement not only from the inequities stemming from differences in the wealth of the local communities, but also from differences in local preferences for education. Unlike other programmes, full state funding provides no incentive for local tax effort. It may or may not provide incentives for performance.

Generally, a decision is made on the task unit (pupils, teachers, ratio of pupils to teachers). The necessary revenues are then raised by the state/province and distributed by the state in the form of a block grant. Typically, full state funding programmes permit very little local tax leeway; that is, LEAs are not permitted to further tax the locality to add on to the basic grant (although leeway may be allowed for other purposes). In the USA, Hawaii and Washington use the full state funding approach. In Hawaii, there is no local leeway and local leeway is less than 1 per cent of the basic support programme in Washington. In Canada, six provinces (New Brunswick, Newfoundland, Labrador, Northwest Territories, and Prince Edward) all have variants of the full state funding approach (Gold, Smith, Lawton, 1995). Full state funding through inter-governmental transfers of largely unrestricted block grants, moreover, represents a solution to issues of decentralization in countries where local taxation is neither viable nor desirable.

While full state funding neatly escapes the equity horn of the equity/efficiency dilemma, it can be argued that it impales itself on the efficiency horn. The guarantee of full funding for a specified basic programme without local discretion to raise supplementary funds, or to allocate funds according to local preferences, may undermine local incentives for allocative (the purchase of the most appropriate resources) and technical efficiency (the most productive use of those resources). There is some evidence that Hawaii boasts a more dynamic than average private sector as parents are able to move their children to schools that offer more enriched programmes (Nehring, 1994).

Milton Friedman explicitly attempted to deal with this equity and efficiency dilemma in his *voucher* approach. First articulated by Friedman in 1955, this approach is based on the premise that the combination of the public financing of schooling and public governance of schooling destroys incentives for efficiency while doing little to promote equity. Under a voucher scheme, schools would be regulated by government but operated by private individuals/firms. Students would carry vouchers (to be redeemed by the state) to the school of their choice, thus creating a substantial student/parent interest in school effectiveness. Since families could 'vote with their feet', schools would be subjected to a market-like discipline. While the voucher approach remains hotly debated in the USA (scores of voucher and tax credit bills are introduced into the United States Congress each year), it has never been fully tested, both because of the fear it would not meet the church/state separation requirements in the United Sates Constitution, and because of entrenched resistance from public school advocates (Moe, 1995). Since other countries do not have these restrictions, they provide a better test of the effects of such choice on efficiency and equity issues.

Government funding of parochial and independent schools in Australia has apparently resulted in an exodus from public schools in favour of the more prestigious non-public schools, particularly on the secondary level. Since the non-public schools remain selective, there is some concern that "if present trends continue, public (schools) will become a safety net, to catch the residue of children not catered for by the private sector" [Anderson (1991) cited in Fowler, Boyd, and Plank, 1993, p. 158]. It can be argued, however, that this very exodus may be the stimulus needed to improve the effectiveness of the public schools. Arguments that undesirable schools for all are better than even more undesirable schools for a few, smacks of sophistry.

3. General versus categorical grants-in-aid

State aid programmes often include both general aid and categorical aid. Typically, by far the greatest percentage of grants-in-aid are provided as general aid which can be used for any legitimate operating cost or cost categories (e.g. instructional costs, administrative costs, etc.). The primary stated purpose of the grants is fiscal equalization to some state or locally determined minimum programme offering. Since, in fact, most general aid grants are not accompanied by mandates requiring either a specific local tax effort or a minimum level of spending, or a minimum level of performance, general aid, which is the type of aid typically used to fund the basic programme, can be used to reduce local taxation where such exists. For example, in 1980, in New York State, it was estimated that total educational expenditures increased by 59 cents for every additional dollar in unrestricted state aid, but that the percentage spent to reduce taxes was higher for high-wealth districts and lower for poorer school

districts. Overall, researchers estimate that about one-half of every additional dollar in aid is spent on programme and about one-half is used for local tax relief (Odden and Picus, 1992).

In contrast to the general aid provided to LEAs, many governments also provide various forms of categorical aid. These special-purpose aid programmes, as the name suggests, allocate funds for specific policy mandates (e.g. LEA consolidation, testing, etc.), on-going areas of concern (e.g. special needs of students, transportation, etc.), and new initiatives (e.g. technology acquisition and use, school-to-work transitions, etc.). While categorical aid is intended to promote particular policy goals, in practice it is difficult to prevent LEAs from using this type of aid to supplant local funding without strict maintenance of effort, rules and rigorous reporting standards. While the enforcement of such standards is costly, there is some evidence that such enforcement results in the intended stimulation of spending for a specific purpose (Odden and Picus, 1992).

In multi-level systems, both general and categorical aid are formula-driven, but governments rarely use the same type of formulas across all types of aid. New York State, for instance, has over 29 distinct aid programmes. The general operating aid programme, which distributes about 60 per cent of the state aid dollars, is based on a highly complex foundation-type, percentage-equalizing programme. Of the categorical aids, some are allocated as flat grants, some as equalizing grants, and others as competitive aids (Questar III, 1996).

While categorical aids are often cast explicitly in an incentive framework (i.e. to stimulate funding for a specific programme), they may have little effect on the central purposes of schooling. The potential of the general grants-in-aid to realize the equity and efficiency goals of state policy is, for a number of reasons, much greater. First, the amount of general operating aid is much greater than the amount of categorical aid. Second, categorical aids are narrowly focused and therefore can be expected to have only a marginal impact on the local programme. Third, categorical targeting requires local action with regard to specific inputs, but does not encourage local problem-solving in terms of the production of outputs. And finally, since categorical aids are often not equalized in terms of local wealth they are, at best, non-equalizing, and can be anti-equalizing. In fact, the best uses of categorical aids, and resource equalized categorical aids as well, are in fine-tuning the aid programme where direct formula adjustments are too cumbersome, and as seed money for local initiatives.

4. Formula adjustments

Formula adjustments are a way of adapting aid formulas to respond to extraordinary costs generated by factors beyond the control of the LEA, or as incentives for the provision of a certain standard of services to

students at different levels or with special needs. Typically, formulas are adjusted for the level of schooling provided, student characteristics, school size, or the location of the school. Adjustments for level and student characteristics are most easily made by weighting the basic student count. Basic student counts are based on enrolment or some indicator of attendance. Regardless of whether enrolment or some sort of attendance calculation is used as the base count, student counts can be adjusted or weighted to reflect differences in resource costs. For example, in the USA, many states weight the average primary student 1.00 and the half-day kindergarten pupil as .50. Since, at the secondary level, additional costs are generated by the need to provide laboratories, larger libraries, and a variety of elective courses, secondary students may be given an additional .25 weighting so that every secondary student is counted as 1.25. Some states also now have given additional weight to students in K through 3 to increase district opportunities to invest more per student in these learning-to-learn years.

Student counts can obviously also be weighted to reflect the greater resource needs of students with learning deficits or handicapping conditions. In New York State, students who fall below the state reference score on a competency test are given an extra .25 weighting, while students with handicapping conditions are weighted by the percentage of time they must spend outside their regular 'mainstream' classroom. Another approach to handicapped weightings is to assign weights based on the condition itself. For example, students with various conditions might be weighted as follows (Burrup, Brimley, Garfield, 1996, p.114).

Communicative disorder	1.1
Visually impaired	1.6
Other health impaired	1.8
Intellectually disabled	2.4
Learning disabled	2.4
Severely intellectually disabled	2.6
Hearing impaired-hard of hearing	2.7
Hearing impaired-deaf	2.9
Behaviour disorder	2.9
Orthopedically disabled	2.9
Multiple disabilities	3.4

A third approach, and one used by a number of Canadian provinces, is to provide aid for special-needs students only to the extent that a given LEA has a greater than average number of such students (Gold, Smith, Lawton, 1996).

In addition to adjusting formulas for level and student needs, it is not uncommon to adjust them for burdens created by size differences or differences in the costs of resources. Size adjustments represent an

attempt to protect educational services from the cost overburdens related to rural isolation or inner city locations. What are called 'necessarily small schools' are schools that, for practical reasons related to isolation, cannot be merged to form larger schools. Typically, they suffer from what is termed 'rural overburden' – inadequate resources, high teacher and administrator turnover, and higher than average costs per student due to limited enrolments. Inner city schools in contrast, it is argued, suffer from 'municipal overburden' – higher than average costs due to the numbers of students with special needs, safety and maintenance requirements, and intense competition with health, welfare, and immigration services for local funds, which reduces the amount of resources available for schooling. While there is a paucity of research on rural and municipal overburden and even on scale economies, both common sense and extant research suggest that very small schools and very large schools are not able to take advantage of economies of scale. The available research, however, provides little guidance in the thresholds for determining 'too large' or 'too small', and none in the changing cost in output per additional student or groups of student (Odden and Picus, 1992). Nonetheless, many systems provide sparsity and/or density weightings on the pupil count. For example, the following small school weightings for elementary school are based on the assumption of a desired class size of 23. The issues become more complex at the secondary level because of the addition of a variety of elective programmes.

Elementary	Weighting
One-room rural	1.50
< 100	1.40
100-149	1.30
150-200	1.20

Saskatchewan takes a slightly different approach with its small school adjustment factor. Specific allocations are provided per pupil for up to 10 pupils when any class size falls below 20. Unlike sparsity adjustments, density adjustments tend to be rare, perhaps because a large portion of the special needs adjustment funds are allocated to cities because of the characteristics of their students (Gold, Smith, Lawton, 1995).

In the past 20 years, adjustments for the price differences faced by LEAs in different parts of countries have become a popular topic for discussion, if not always policy. In studies of the costs of educational resources in the USA, within-state prices differ by as much as 40 per cent (Odden and Picus, 1992). However, adjustments for cost again would favour cities, with their higher cost-of-living and staff salaries and, therefore, are often politically unpopular.

Another type of formula adjustment, and one quite common, consists of 'save harmless' provisions. These provisions are meant to assist LEAs in which enrolments are declining faster than costs. Such provisions guarantee aid equal to some past year to give the LEA time to decrease costs. To the extent that LEAs are given a choice in using the past year or current year enrolment, save harmless can act as an effective way to facilitate expenditure reductions over time. Save harmless, however, as it has been used historically in states like New York, results in aid based on pupil counts many years in the past and is neither efficient nor equitable (Guthrie, Garms, Pierce, 1988).

The effectiveness of weighting systems in adjusting formulas to meet state goals is determined both by the accuracy of the weightings (the weightings must be updated regularly to reflect the costs of service delivery) and their combined effects. For example, unlimited save harmless does much to vitiate equity, while special-needs weightings that are 10 years old may have implications for equity as well as efficiency.

5. Major issues related to current practice

This brief review of types of state aid programmes, formula types, and their potential for adjustment and targeting, makes it quite clear that while technical difficulties may well exist in formulating grant-in-aid programmes, the technical difficulties do not present a major constraint to the use of formula funding as an incentive for greater equity and efficiency. The major and highly interrelated factors constraining such a use include the following:

- the political nature of education decision making;
- the vague definition of educational goals;
- the lack of comprehensive standards; and
- the limits of educational research.

The political nature of education decision making. Goal consensus is easiest to obtain, the more general the goal statement. General statements, however, translated into policy, tend to mask the actual conflicts or trade-offs that have been made among the goals themselves and can result in a lack of transparency in aid programmes. Some of the goals of government funding of education, in fact, have little to do with the provision of schooling itself. For instance, one of the purposes of state grants-in-aid in developed countries is to provide local property tax relief. Similarly, in developing countries, government subvention of schooling is often an integral part of employment promotion polices. Even where the goals of government aid programmes are education-oriented, the fierce rivalry among geo-political sub-units (e.g. urban, suburban, and rural areas) over the allocation of the funds, means that the final formulation of the aid programme devised, may have little to do with its

stated goals and quite a bit to do with political accommodation. Where the political separation of educational goals and financing exists, it effectively forfeits the incentive value of state aid in terms of educational objectives.

Vague definition of goals. The major stated purpose of the basic aid programmes in North America is fiscal or resource equalization for the purpose of providing a minimum programme. Such programmes, except possibly in the case of full state funding, often are not clearly defined in terms of resource requirements, programme options, or expected outputs. This is reflected in the lack of mandatory local effort or spending levels and is another facet of the separation of policy goals from financing decisions. The net effect of such vagueness is the loss of educational purpose. Political accommodation, combined with this apparent lack of purpose, places both equity and efficiency objectives in jeopardy. Formula adjustments are used to protect political interests rather than to guarantee basic resource needs. Use of attendance rather than enrolment in formulas, caps or ceilings on aid, save harmless rules, and categorical grants all tip the balance in favour of wealthier than average LEAs. The LEAs that are supposed to educate poor children typically are characterized by unsafe physical facilities, high teacher absenteeism, violence on the school grounds, and the scarcity of even basic resources such as pens, paper, and books (Kozol, 1991). As a result, it is possible to predict (and with considerable accuracy) from children's addresses at birth, the educational resources, the treatments, and outcomes that they will experience over their lifetimes (Berne, 1994; Levin, 1994).

At the same time, efficiency is largely ignored. Schools with the highest levels of student performance are considered efficient while those with the lowest performance are judged inefficient, without reference either to the availability or use of resources. As a result, very little is learned from what are, in fact, substantial investments, and progress towards greater efficiency is left largely to chance.

The lack of standards. To the extent that the political support of education is based on vague goals, it is not surprising that goal statements are rarely reflected in the grants-in-aid programmes or in performance standards (Monk, 1994). Almost universally, national- and state/provincial-level statements of goals refer to the education of the whole child. In the best schools in all countries, school heads, teachers, and parents take the holistic approach seriously and schools and teachers make considerable efforts to identify and maximize the productivity of resources appropriate to the development of wide ranges of individual talent and competencies. Other schools, for lack of understanding, inspiration, or resources, simply prepare students for examinations; the only indicators used systematically to measure performance. Because much of the curricular performance is never measured, it is likely that the differences between more and less productive schools are much greater than the examination results suggest. In the USA and elsewhere, this is beginning to change with the introduction of portfolio evaluation systems,

designed to reflect performance related to the full range of local *and* state programme objectives.

The limits of educational research. Vague policy goals and narrow standards, oddly enough, are often combined with a belief in a 'one best system', that is, that allocative efficiency and technical efficiency are independent of the characteristics of the LEA and its community (Tyack, 1974; Levin, 1994). This non-scientific view finds strength in the clear limits of research, which is, at best, only a guide to policy and practice. The complex nature of the education production function itself, suggests, however, that there is no one best way; that there are, in fact, many ways and there is not likely to be a definitive description of production relationships within education in the foreseeable future.

At the same time, where research might make a contribution it is not used. Pupil weighting systems, for instance, bear only the most fragile relationship to costs of providing *effective* services to special-needs populations or the other purposes for which they are designed. In fact, in the absence of performance standards, it is almost impossible to forecast such costs except as is currently done on the basis of prior years' spending. Although it should be added that while awaiting the development of standards, cost indicators could be developed immediately on the basis of what practitioners consider best practice. Similarly, a great deal of research is needed on the costs and benefits of alternative instructional strategies and school structures. Windham (1990) is careful to point out that the research agenda for cost-effective schooling should take full advantage of the multinational research networks that have been established by UNESCO and such organizations as the International Evaluation Association. As the freedom of labour to cross national boundaries increases, so does the worldwide stake in performance standards.

6. Conclusion: next steps

Reuniting policy and finance so that grant-in-aid schemes provide effective incentives to reach government equity and efficiency objectives, depends on proper specification of central government and local government roles and responsibilities. On the one hand, government has a compelling interest in defining equity and efficiency in terms of performance standards, and a comparative advantage in terms of both financing the resource requirements and on-going research. Such standards once defined can serve as the basis for the investigation of and the justification for investments in given levels of resources. On the other hand, where local communities boast appropriate levels of management capacity, they, at least theoretically, have the comparative advantage in problem-solving, that is in identifying the most appropriate resources for their student populations and in putting both purchased and unpurchased

resources (student time, community institutions, civic organizations) to their best use.

Windham (1990) and others have argued persuasively that the grants-in-aid framework that best reflects the comparative advantage of different system levels and explicitly addresses the current problems in governmental aid, is full state funding of the basic programme. Such a framework, by definition, must be designed to avoid the social costs of ignoring equity and efficiency while maximizing the social benefits of investments in schooling. Practically speaking, this requires an outcomes- rather than a purely input-based definition of a minimum programme, allowance of local leeway in spending, funding mechanisms that encourage local multi-year-term planning, state support for local problem-solving initiatives, and some choice of schools even if that choice is restricted to government schools.

Performance-based minimum programmes. Performance-based minimum programmes would define explicitly state expectations of LEA performance in terms of facility and safety issues, programme offerings, and student achievement. On-going research would be used to support the estimation of the average cost of the provision of the required services and the marginal costs of providing the services to support students with special needs, including those living in resource-deprived environments. Local minima could exceed but not lag behind such standards. External assessments of management and pedagogical practices would be used to assist those LEAs characterized by lag patterns in restructuring and in the internal monitoring of resource use. Such LEAs would be required to show progress toward goals in order to maintain funding levels.

Local leeway in spending. Societal interest in education is limited to the production of those competencies that support an informed citizenry and a productive economy. In contrast, at least theoretically, private interest in education is unlimited and reflects consumption as well as investment preferences. While it is regrettable that housing patterns result in communities of unequal wealth and therefore unequal capacity to translate the summation of their private preferences into public school policy, these patterns are unavoidable in democratic systems. Allowing no opportunity for the realization of community preferences serves no purpose while it jeopardizes efficiency defined in terms of local goals. It is the setting of the minimum at too low a level that undermines equity, not individual or community freedom to strive for higher levels of performance through an expanded curricula.

It should be noted that while the financing of the minimum programme in all LEAs, rich or poor, and allowing local add-ons, may overcome many political obstacles to full state funding, establishing the programme will still be an uphill struggle, with dissatisfaction from the political left and right. Moreover, since the cost of the minimum programme is likely to exceed current spending on education, new revenue sources will have to be identified at a time when the political

agenda in many countries is shifting away from children to senior citizens.

Forward funding. Regardless of state/local shares in funding, school systems are notorious for the hand-to-mouth type of planning that is done because of the uncertainty of financing in terms of both total amounts and the timing of school aid payments. Individual school districts are often forced to go to their local budget votes (to raise the local share) without knowing the amount of the state aid they can expect. Forward funding of LEAs would undoubtedly create fiscal planning issues for state government; however, it also would do much to stimulate local planning and thus create the potential for improved efficiency.

State support for local problem-solving initiatives. Through on-going research and provision of seed money and technical assistance, government could actively support and stimulate local initiatives designed to improve student learning, at least cost. This, combined with a philosophy 'that supports local determination of the best way to arrive at the state performance standards, could well breathe new life into the poorest LEAs. The LEAs, whose performance presents the greatest challenge to states/provinces, currently have few either internal or external incentives for improvement.

As governments move toward fully funding performance-based minimum standards, it is important that both the explicit and implicit incentives and disincentives in the system for school personnel and students are carefully monitored and evaluated. The balance between government and community interests and equity and efficiency is a delicate one and more than one generation has been sacrificed to poor judgement. This suggests that a reasonable first step is to shift current funding from categorical programmes to a straight-forward, transparent general grants performance-oriented approach and then to begin raising the level of equalization until such time as the political will exists to fully fund the social minimum.

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Chapter 5

Incentives for public higher education

Yan Zheng

1. Higher education's changing environment

Since the late 1980s, it has been observed throughout the world that government is devolving some forms of its direct control in the management of public higher education institutions, while increasing its focus on the issues of greater economic efficiency, student access, quality of outcomes, and institution and system accountability (Goedegebuure *et al*, 1993; Mauch and Sabloff, 1995; Neave and Van Vught, 1994). Public higher education institutions now are being asked to engage in new tasks and assume new responsibilities under increasingly tight budgets, while simultaneously being given greater flexibility in the allocation and disbursement of government funds, institutional management, and the use of market approaches to generate non-governmental revenues (see, for example, Sanyal, 1995, for examples of management responses to these changes). Williams (1995, p.1) points out that this situation represents a paradox in that "universities are both being subject to more state regulation at the same time as they are being exposed to market forces and given more financial flexibility.

This change in the relationship between government and higher education in many countries can be attributed partly to financial constraints and increasing public demands for higher education accountability, and partly to the development of a proliferation of post-secondary education institutions that have different missions and differential admission pools of students. Very often the responsibilities for varying types of higher education are fragmented among government departments. With the proliferation of higher education forms and types, the role of the government has had to change from the traditional direct control of higher education administration, to creating an incentive environment for management in the form of new policies and increased monitoring of policy implementation. The government's responsibility now is likely to take the form of establishing general parameters and a well-defined legal framework that can guide the development of

differentiated higher education systems and ensure that higher education outputs better meet the needs of national economic and human resource development (World Bank, 1994).

Furthermore, when facing the financial constraints of recent years, it has been more appropriate for governments to rely on incentives and market-oriented instruments to implement policies, as these approaches encourage greater adaptation to specific institutional needs and can encourage efficiency in the use of public resources (Goedegebuure *et al*, 1993; Mauch and Sabloff, 1995; World Bank, 1994; Ziderman, 1994). A good example of this change has occurred in educational planning. Windham (1980) has pointed out that heavily subsidized higher education allows higher education to shift the costs of 'bad' educational decisions to the public taxpayers when graduates are unemployed or underemployed. Such employment problems result when students lack information and incentives to help them choose appropriate fields of study and institutions or, upon graduation, to find employment effectively. Due to the characteristics of the higher education bureaucracy in many countries, higher education planners and administrators often cannot make proper decisions on curriculum reforms to meet labour market demands, nor do they always have the incentives to be responsive to such demands. Therefore, students and their parents may fail to receive, or may misinterpret, the available information in choosing fields of study and institutions. The individual decision-makers commonly are limited in information and choices, and may focus on the immediate benefits of low-cost education, rather than the long-term future benefits. He concludes:

> "*...a more efficient and equitable solution may be achieved by neutralizing or reversing any one or a combination of the present incentive signals. It would thus be possible to bring the educational output more in line with that desired by government while simultaneously increasing individual freedom of choice....*
> *The incentive analysis approach to planning can thus be seen to have both a diagnostic and prospective aspect. It is useful in analyzing why certain patterns of behaviour exist and then in determining the redirection of education policy to bring results more in line with larger government policy*". (p.121)

Taking advantage of incentive analysis in planning, this chapter presents a theoretical framework for incentives and analyzes the appropriateness of the financial incentives currently used by governments in funding public higher education. The analysis focuses on the practices in developed as well as developing countries; the lessons learned from the experiences of developed countries provide a foundation for consideration of similar proposed reforms within other higher education systems.

The chapter is organized as follows: (1) introduction of a theoretical framework for incentives; (2) a review of recent financial directions in higher education management in developing countries; (3) a presentation of examples of incentive-based funding schemes in public higher education in developed countries (the advantages and disadvantages of each scheme are analyzed by case studies); and (4) a summary incorporating suggestions on implementing financial incentives within the funding of public higher education.

2. The nature of incentives in financial management

Incentives are interventions for change. In the field of financial management, there are two common approaches to effecting resource allocations: the use of mandates and the use of monetary rewards (Balch, 1980). However, these two types of incentives imply different management mechanisms, financial effects, and impacts on participants' behaviours. Mandates are promulgated that require or forbid a particular form of behaviour. The financial effect is the implicit or explicit threat that punishments will follow from failures in compliance. Participants' actions are strictly constrained and motivations are suppressed. Proponents of mandates argue that mandates offer the most direct way of achieving public policy goals and make it possible to move in the direction of uniform levels of service across the country. Opponents of mandates claim that mandates constrain the local officials' flexibility to adapt the mandates to their own circumstances. The consequences are to sacrifice the advantages of local adaptation for standardization within the system, and of local for centralized control.

Financial incentives, on the other hand, establish objectives with monetary rewards distributed on the basis of performance. Participants are motivated to be creative and to try to maximize the desired objectives at the given costs. Supporters of financial incentives claim that these incentives also have the 'moral superiority' of voluntary compliance and minimize the need for "coercion as a means of organizing society" (Church and Heumann, 1989).

> "*Incentives reduce reliance on coercion or altruism, both of which are unreliable and costly. Incentives reduce the need for complex information about what is worth what to whom, since producers and consumers settle that by their transactions. And efficiency-creating changes cannot usually be impeded by those who stand to lose from the changes, since the market is impersonal and anonymous. Finally, incentives can direct innovation in socially desirable directions, by stimulating inventions that conserve scarce resources and fill economic needs*". (Balch, 1980, p.62)

Opponents of financial incentives dispute their voluntary aspect because the withdrawal of incentives is a form of punishment and financial incentives may crowd out an organization's collective goals. However, in general, financial incentives are viewed as attractive alternatives to mandates in achieving public policy and, in recent years, financial incentives have been preferred in practice by many country governments (Church and Heumann, 1989; Williams, 1991; World Bank, 1994; Ziderman, 1994).

There are two forms of financial incentives: those initiated by the market and those originating from government. They are based on different theories, objectives, and incentive structures. Market incentives are based on the belief that resource allocation decisions are best made through market interactions and that results are optimized by the 'invisible hand' of the market. Market-based incentives provide price-like mechanisms for a set of goods or services so that producers and consumers can respond through the market to reach the unique combination of supply and demand that best satisfies their mutual interests (Balch, 1980).

The advantages of market incentives are to promote rational resource use and to encourage rapid responses to a changing environment. They are "placing responsibility and control at a level where spontaneous and more responsive planning can occur, and providing operating units positive incentives to husband their resources" (Morgan, 1984, p.14). The disadvantages of such incentives are that they accept the existing distribution of economic power (including access to information), place a premium on immediate monetary effects, may promote an excessive emphasis on short-term marketing strategies, and may place education quality and equity considerations at risk. There is a widespread concern that valuable fundamental academic activities will be lost if universities have to show clear evidence of immediate monetary returns for all their activities (Williams, 1991).

Government incentives are based on a conceptual structure that draws on both economic and political theories. Since competitive markets cannot allocate all goods efficiently – because they do not incorporate social benefits and costs – government will need to play a role in allocative decision making when the private sector cannot or will not provide goods or services required for societal well-being. In addition, when resources are limited, the government role may be a means of resolving political conflicts among interest groups (Morgan, 1984). Throughout most of the world, government historically has supported the majority of higher education expenditures. With this responsibility has come the right of government to exert strong control over higher education institutions on how funds should be used.

Governments implicitly incorporate the incentive concept into mandates or funding schemes to direct higher education institutions' actions. For example, until the mid 1980s, most governments were using incremental budgeting because it was a simple way for the government to

manage higher education spending (Jones, 1984). The assumption was that the relative needs and priorities among organizational units generally remained unchanged from one budget period to the next and that changes in annual allocations need only grant each item its proportionate share of any real or inflationary allowance. Under this approach, political conflicts within the institution and among external stakeholders were minimized. When exceptional needs surfaced for new or expanded activities, it was deemed more efficient to deal solely with these exceptions rather than to contemplate a more basic redistribution of resources among organizational units in any comprehensive manner. Unfortunately, one effect of this management approach was that it provided no incentive to operate existing programmes more efficiently or to conserve funds for other uses. This failure to integrate external policy concerns for efficiency into institutional priorities implicitly encouraged institutions to spend all their budget so that their subsequent budget would not be reduced below the current level.

Government incentives provide reinforcement for particular forms and levels of outputs. Sometimes, in order to meet specific social demands, the incentives are initiated independent of consideration of the resources that will be required to produce the desired outputs. For example, government may guarantee access rights to minority, handicapped, or other students but fail to consider whether it can afford to provide the institution with resources adequate to meet these new rights. The strength of government incentives is that desired public policy goals can be achieved; but this requires both a mandate and sufficient financial support. Where public policy goals are inappropriate or cannot be achieved efficiently, it is often because governments do not have the detailed information of the micro-educational conditions of implementation, and the cost of obtaining the prerequisite information may be prohibitive (Balch, 1980). A second weakness with government incentives is that, unlike in the market, where individual producers and consumers interact at the same level and have the same objectives in mind, government incentives are created by the political process and then imposed upon higher education institutions, personnel, and students, some of whom may not have the same objectives or priorities as those advocated by the political process. The result can generate disincentives as institutions may feel restrained from their own priorities or may respond to government incentives solely from fear of punishments if they fail to make the change (Jones, 1984; Newman, 1987). A third weakness is that incentives may be successful for some types or forms of higher education but become disincentives in other areas. This chapter focuses on the analysis of the current government incentives and their effects on higher education management.

3. Financial incentives in developing countries

In most developing countries, public higher education historically has been funded by the government under centralized planning and control. Incremental line-item budgeting has been the primary funding mechanism. In the past decade, financial constraints and excess demand for higher education have forced governments in developing countries to look for financial and budgetary alternatives. Though systematic changes are only now beginning, discussions, debates, and small-scale changes are taking place throughout the developing countries. Accountability, efficiency, and equity have become top priorities in regard to resource allocations. The movement in developing countries generally can be categorized as follows, with the consideration of differences in tradition, political systems, and the scale of public higher education.

(1) Attempts have been made to achieve greater cost-efficiency through cost analysis and standardizing management practices. Most developing countries did not have established standards and measures for student/faculty ratios, space management, and programme review before the mid 1980s. A high unit cost per student in operation, especially compared with private institutions, has drawn attention from government officials and institutional administrators to cost analysis and cost-efficiency issues. Many country governments, such as China, Ghana, Korea, Mexico, Nepal, Nigeria, Papua New Guinea, and Zambia, have set norms for student/faculty and supporting staff ratios and for facilities and equipment utilization (Harman and Selim, 1991; Sanyal, 1995). The unit cost per student has been reduced but is still higher than in private institutions, due to the restricted line-item budgeting and problems in economies of scale in public institutions' operations.

(2) Cost-sharing concepts have been introduced into higher education finance. Public higher education in developing countries commonly has been virtually free. Students were even provided dormitory and textbook expenses in some countries. Since the late 1980s, many governments have begun charging tuition and fees at public institutions for reasons of both efficiency and equity (between participants and non-participants and among participants in different types of higher education). The introduction of fees is a means to moderate excess demand for higher education, to promote accountability by encouraging students to complete degrees on time, and to provide a supplementary financial resource to higher education as well. This has occurred in such nations as Chile, China, Hungary, Indonesia, Jordan, Kenya, Korea, Mexico, Thailand and Vietnam (Sanyal, 1995; World Bank, 1994; Ziderman, 1994).

(3) External revenues have been increased as a percentage to total budget. Governments of Bangladesh, Brazil, Ghana, Korea, Malaysia, Nigeria, Thailand and Venezuela are adopting market approaches to encourage public institutions to expand their commercial activities such

as research and service contracts, investments, and endowments (Harman and Selim, 1991; Sanyal, 1995; Ziderman, 1994). Therefore, governments get some relief from heavy cost burdens while institutions and faculty are motivated to generate additional income for their core or discretionary spending.

(4) Private higher education or privatization of certain higher education services (bookstores and cafeterias, for example) has been encouraged as a way to reduce the cost burden of higher education and to allow the private sector to absorb part of the demand for higher education. Private higher education is established in China, Kenya, Somalia and Zaire, and is flourishing in Brazil, Colombia, Indonesia, Philippines and South Korea (Levy, 1994). Privatization is a way to provide greater higher education benefits to both individuals and to the public.

(5) Many governments are promoting greater decentralized control of higher education finance. Most institutions in developing countries have been under a restricted centralized budget control. For example, some African universities could not issue cheques without going through several governmental divisions for approval, a process that could take four weeks to two months (Sanyal, 1995). Since the late 1980s, some governments, such as Botswana, Chile, Hungary, Mauritius, Thailand, and Zimbabwe, have modified their restrictive budget processes by decentralizing the expenditure control to institutions, allowing institutions to make internal reallocations, and permitting the carry-over of unspent budget allocation to the next year. Other governments, such as Argentina, Brazil, Korea, Mexico and Thailand have proposed or sought the possibility of using lump-sum and formula funding, but they have met opposition from institutions and faculty (Harman and Selim, 1991; Sanyal, 1995). Both lump-sum and formula funding require the explicit statement of priorities, at the central authority level for formula funding, and at the institution level for lump-sum allocations. Both imply a need for recurrent review and rejustification procedures, in which university personnel have been reluctant to engage.

Although many changes have taken place in public higher education financial management, there are some major barriers to achieving desired goals throughout developing countries, due to some fundamental problems in the organizational structure, culture, management, and lack of technology and expertise. In most developing countries, there is a comparative lack of expertise in designing and operating sophisticated data collection and information systems, in conducting detailed cost analysis, and in carrying out effective strategic planning. In addition, at the institutional level, there is a serious lack of experience in fund raising, marketing, and managing market-oriented operations.

Second, the tradition of centralized control has ingrained in the public a strong belief that it is the government's responsibility to support higher education financially. These deeply held attitudes politically constrain increasing tuition and fees, employing market approaches in higher education management, and setting competitions among

institutions and faculty. Also, as is the case in all societies, organizational inertia makes institutions and faculty resist changes which might threaten their employment or financial security.

Third, the organizational structures in developing countries are often hierarchical, with rigid and detailed oversight procedures by the government. Such systems can stifle the innovative potential of the institutions and individual faculty (Harman and Selim, 1991). Even if governments would like to make a change, the rigorous accounting systems and bureaucratic inertia, not to mention lack of communications between governments and institutions, may become disincentives to institutions and faculty. Therefore, in order to implement plans for change successfully, it is necessary for developing countries to provide proper preconditions (including organizational reform, technology, and training) to enhance participants' capacity to initiate and support a more responsive incentive-based financial management system. Furthermore, it is necessary for developing countries to become familiar with the experiences of developed countries before making large-scale changes and implementing new financial incentives of their own. The following is an analysis of government incentives and their effect on funding public higher education in developed countries.

4. Financial incentives in developed countries

Compared with the development of higher education in developing countries, higher education in developed countries has a longer history, and, therefore, has more established practices. Based on a country's economic and political situation, governments in many developed countries have made various reforms in regard to budgeting and financing of public higher education. Since the mid-1980s, financial stringency has forced the governments in many developed countries to reconsider their funding strategies for public higher education and create incentive-based funding schemes, as incentives can promote efficiency in resource uses. The following presents examples of incentive-based funding schemes and analyzes their impacts on higher education management in developed countries.

Budget issues are commonly the focus of financial reforms because "the budget is a means to achieve intended and desirable ends – a mechanism for converting plans into action, for channelling resources toward the accomplishment of organizational purposes and goals. In many cases, the budget is the only device that provides incentives for change and promotes acceptance of organizational priorities" (Jones, 1984, p.15). Therefore, a budget is inherently political in nature. Budgets are not value free as values and priorities are imbedded in the methods to calculate and operationalize the resource allocations.

A budget is generally considered to have three components: a base or core budget, a special-purpose budget, and a capital budget (Folger and

Jones, 1993). The base budget is the part of the budget that provides continuing core funding to allow an institution to pursue its mission. It accounts for the major share of the budget and is usually provided without ties to specific activities or outcomes in the expectation that it will support a variety of activities yielding multiple desired objectives. However, this intent produces a paradox in that, on one hand, it allows institutions to achieve multiple objectives at a lower overall cost than if they are separately pursued. On the other hand, a base budget is funded on input variables that may not reflect desired outcomes and thus cannot become appropriate indicators of accountability.

The conventional budget method is incremental line-item budgeting. This mechanism assures a rational planning and spending control from the government and minimizes political conflicts as it makes changes at the margin only. But it does not encourage managers to examine a full spectrum of policy choices for the best budget, nor does it provide incentives for enhanced efficiency. In addition, as line-item budgeting controls input factors, it provides no incentives for improving education process and outcome quality. In recent years, many governments have changed their funding schemes to 'lump sum' and 'formula funding' modes for the base budget of higher education.

Lump sum grants mean resources are allocated as a given amount to higher education institutions after the central administration negotiates with each institution concerning objectives, plans, the resources needed to implement the plan, and peer reviews. Funds are awarded with few or no strings attached so that institutions can spend the money for whatever it deems necessary to achieve its stated objectives. Sometimes allocations are provided based on selected objectives. The basic principle of lump-sum funding is to empower the institutions to be responsible for the full cost of their operations with the funds they have. The government as the fund provider has good faith in the institution's ability to engage in effective planning and evaluation processes, while the institution as the fund recipient has the flexibility, and *responsibility*, to use the fund for activities or programmes that reflect the institution's priorities.

The advantages of lump-sum funding are: (1) it is acceptable to the institutions as they prefer funds they can use flexibly; (2) it encourages financial responsibility and local efficiency optimization as institutions have full control over the fund usage and can consider the opportunity costs while making specific expenditure decisions; (3) it provides institutions with flexibility in adjusting programmes to achieve desired goals within the available funds (Folger and Jones, 1993). The disadvantages of this approach are: (1) government objectives may not be accomplished as there might be differences between state and institutional priorities; and (2) lump-sum funds do not incorporate any inherent accountability mechanism.

The lump-sum scheme has recently been adopted by the governments of Australia, France, Norway, and Sweden for funding higher education institutions' base budget in one form or another, in order

to decentralize financial control and to promote improved higher education management. The Australian Government also incorporates formula funding into the lump-sum scheme. The lump-sum grants are allocated for a three-year period according to a formula based on student numbers, with weights to differentiate level of instruction and disciplines. The new funding strategy in France is called 'contract funding'. The French Government introduced a system of four-year contracts with higher education institutions in 1989 in order to disengage from detailed and daily administration functions. The contracts require higher education institutions to draw up detailed mission statements of objectives, resource needs, and outcome evaluation procedures.

Some positive changes have occurred in these counties under the lump-sum funding. One change is that efficiency has increased in institutional operations as higher education institutions have gained financial flexibility in their resource management (Sanyal, 1995). Another change is that institutional administrators and faculty are more motivated to adapt innovations that reduce costs (Massey, 1994). One problem in this type of funding is that it fails to be responsive to the variations in costs related to different institutional missions and objectives, for example, the dissimilarities between large research institutions and small colleges (Green, 1984). A second problem is that, when lump-sum allocations are used for internal allocations, the tension between central administration and sub-units may be enhanced as sub-units try to become as independent as possible. Departments that can generate external income may want to go their own way (Massey, 1994).

Formula funding bases allocations on a mathematical calculation that, at least in theory, relates budgets to programme demands and costs. The calculation can be as simple as a single student/faculty ratio, or as complicated as an array of costs per student credit hour by discipline and by instructional level. The bases for such formulas typically are historical data, projected trends, cost studies, or peer analyses. The factors incorporated within a formula represent the decision-makers' policy preferences and are normally a product of political negotiations as much as technical analysis. For example, how should graduate instruction be funded relative to undergraduate instruction? As it is assumed that it takes more faculty time to teach graduate students than undergraduates, the solution is to give differential weights to faculty workload. But the issue of how large the differential should be depends on the decision-makers' perception of cost differences and the priority for graduate instruction in the institution's overall goals.

The advantage of formulas is two-fold according to Brinkman (1984). One is the salutary effect that formulas enhance the uniformity and ease of budget preparation and presentation. A formula provides an apparently objective method for estimating the budget requirements, reduces political competition among public institutions, and facilitates comparisons between institutions and activities. A formula makes explicit the factors to be considered in the decision-making process, thereby

directing the focus of attention to a set of policy variables. Formula funding can also promote efficiency in institutional operations as higher education institutions have greater autonomy in internal allocations. The second effect is on decision rules. A formula removes part of the uncertainty from the decision process, reduces the complexity of budgetary standards and establishes an objective base for the determination of institutional fair shares. It also promotes the equitable resource distributions among institutions.

A major problem of such formulas is that they are commonly enrolment driven. In the situation of constant or declining enrolment, the shift of student interests may be difficult for institutions to respond to because tenure agreements and unionization may make it impossible to reduce costs in existing programmes where demand may have declined. Similarly, funding formulas are usually insensitive to new programme initiatives, unless the initiative comes with a new amount of funding. In addition, a formula may not recognize the varying quality of programmes at different institutions as it is based on *how much is done*, not *how well it is done*. As was noted above, funding formulas may not provide adequate recognition for differences among institutional roles and missions. Also, because formulas involve the projection – rather than actual prediction – of budgetary needs, they are only as accurate as the data upon which the formulas are based. Formulas will not adapt automatically to such changes as new requirements for technology or the need for greater laboratory instruction. Finally, funding formulas cannot serve as substitutes for recurrent public policy decisions (Brinkman, 1984; McKeown, 1986). Due to the financial constraints and the increasing concern with higher education quality, new strategies have been added to offset the weaknesses of the formula-funding approach. Some of these changes are illustrated below.

Formula funding is widely used for resource allocation in the United States of America. To tackle the variations in enrolment change, 'decoupling' and 'buffering' techniques were added into the formulas to loosen the relationship between enrolments and appropriations. Decoupling eliminates the connection between organizational units within an institution. Each unit does its own needs calculation and non-enrolment factors can be used. Buffering, on the other hand, deals with the change portion of the enrolment. Various methods have been used such as setting funding bases to guarantee institutions to receive 90 per cent of the prior year's level regardless of enrolment change; or set a threshold that any changes over an agreed percentage will be subtracted before the funding request is made.

A second change is that many states have improved their cost analysis by incorporating marginal cost estimates. Average cost (total cost divided by the units of service) is the common basis for a formula calculation, but such calculations ignore the scale of operation. Marginal cost is the change in total cost associated with adding one more unit to the level of activity. Marginal cost has greater relevance to funding, but

unfortunately it is more difficult to determine. A simple but typical approach is to set a funding level as the base. Any additional change will be calculated separately. For example, small institutions will get a base amount. Large institutions will get this same base plus additional funds on a per-student basis. This new strategy recognizes the differences in scale of institutional operations.

A third change is addressing the quality issue with funding formulas. Formulas have been criticized for using inputs as their sole measures and ignoring outcomes. With the increased public demands for higher education quality, quality and outcome measures have been popularly added to the formula to link the level of appropriations to outcomes. Allocation is made in the form of either additional funding or as a percentage of the total budget. However, as quality is difficult to define and outcomes are multi-dimensional, a recent survey shows that the number of states that incorporated quality and outcomes measures in formulas declined from 20 states in 1988 to 10 in 1992. This is "because with government reduction in public funding to higher education due to financial pressure, institutions are understandably concerned about protecting their base budget. They would like to maintain the funding they have with minimum restrictions and requirements from the state. Performance measures add a level of uncertainty to already uncertain funding for higher education" (Layzell and McKeown, 1992, p. 23).

Formula funding has recently been used by the governments of Canada, the Czech Republic, Denmark, Finland, the Netherlands, and the United Kingdom. The significant changes reported in these countries are that student enrolments have been increased and the unit cost per student has been decreased (Sanyal, 1995). In addition, in the United Kingdom, the institution-wide committees and members on board have been reduced, and academic units assess more carefully the cost of central services before using them (Williams, 1995).

Denmark and the Netherlands have also employed output factors in their formula funding. The Danish Government uses the number of students completing courses instead of the number of students enrolled for the formula calculation. The Dutch Government has included the drop-out rate in the formula. The use of output factors is an attempt to combat the problem of excessive length of study, which is a common problem in Western European countries (Williams, 1995). A problem in using output factors is that it may penalize institutions unfairly as it attacks symptoms rather than the sources of problems. Higher repetition and drop-out may be as much a consequence of low quality of entering students as it is due to institutional inefficiencies. Employing output factors in the formula funding may discourage institutions from offering remedial programmes for students who are below the average in the study performance (Ziderman, 1994).

The trend in formula funding is that formulas are becoming more complex. More formulas are used to further differentiate higher education institutions by discipline, level of instruction, type of institutions and

function (Layzell and McKeown, 1992). This is because governments have found it necessary to introduce factors that differentiate among institutions with dissimilar missions and programme offerings. A 1992 survey reported that 33 state governments in the USA used formulas to assist in the appropriations to higher education. The number of formulas used in budget allocation varies from one formula for total budget up to 15 formulas for different areas of the budget (Layzell and McKeown, 1992).

Performance criteria incorporated in the funding scheme have produced a paradox in that, on the one hand, they have given institutions financial autonomy, but on the other, have increased government monitoring. Employing outcome measures in funding decisions means government becomes more involved than was the case with input budgeting. The success of this new approach depends on how well the outcome measures are specified, the costs for evaluation and, more importantly, whether institutions can adapt to the impact of this procedure on their base budget.

Some institutions use formulas for internal allocations. An empirical study on formula use for internal allocation revealed that at the department level, formula calculations are only treated as background information as departments have different objectives and concerns. Qualitative factors and peer comparisons are more important in making actual allocative decisions (Zheng, 1992). The implication is that faculty and administrators may be indifferent to the government incentives if the incentives are not perceived appropriate for decision making at the intra-institutional level.

As financial constraints are projected to remain throughout the 1990s, higher education institutions will want to make sure their base budget is protected before taking on any new incentive strategies.

> "*If state resources for higher education remain constrained, it is likely that formula usage and refinement will become more creative in the 1990s. Institutions probably will attempt to devise ways in which their base budgets are held harmless. However, it is also likely the legislators, governors, and other state policy-makers in their concern for productivity and quality in higher education will look to base budgets for savings and increased efficiency in institutional operations. It is likely that they will look for funding formula as a means to meet their goals*" (Layzell and McKeown, 1992, p. 24).

Special-purpose funding usually consists of a supplementary allocation to institutions to advance specific public policy goals. Such funding provides a mechanism whereby policy-makers can exercise their legitimate power to draw institutions' attention to social demands without inappropriately interfering in an institution's internal operation (Jones, 1984). Special-purpose funds are usually targeted for special activities,

but policies may allow some part of the allocation to be used for ongoing activities if these are supportive of the new initiative.

The intent of special-purpose funding is to provide positive incentives to change individual and organizational behaviours. Often it is difficult, within the context of the base budget, to build a political consensus that higher education should make contributions to new public policy goals. Special-purpose funding can accomplish this end by either mandating or encouraging voluntary participation of higher education institutions. The following presents examples of the practice of special-purpose funding in the USA.

Categorical funding is legislatively earmarked funds for specific programmes. It provides a straightforward and effective framework for accountability. The purpose of this type of funding is to focus on programmes specifically identified as state priorities such as increasing representation of certain populations, strengthening engineering and science programmes or developing ties between higher education and business and industry. Within budget constraints, all eligible institutions meeting application requirements receive funds. Sometimes, participating institutions are required to match government funds by reallocation from low-priority programmes or with revenue generated from private sources.

The advantages of this approach are that it has clear goals that are shared by both higher education and external political actors such as legislators, industry, and local interests who support the objectives and make efforts to mobilize needed resources. The requirement of matching funds provides incentives to institutions to focus on a few high-priority activities. The disadvantages are that substantial resources must be committed over the years for the effort to be effective and political interest is often hard to sustain. If funds are built into the base budget, there is a tendency to divert resources to other needy programmes and to erode commitment to the programmes. In addition, once the programmes are established, it is common that the beneficiaries might place strong pressure on government to make the programmes a part of the institution's base budget.

The State of Florida's Regents (the state higher education governing board) created a 'Quality Improvement Programme' to provide special grants to improve selected programmes across the state higher education system, since 1978. The outcomes are positive. For example, engineering programmes have been improved and more engineers have been produced. Teaching and laboratory facilities have been enhanced with the special grants. However, some observers questioned whether these funds were truly supplemental or whether they were instead funds that would have come to higher education anyway, and were simply appropriated with more restrictions. Another problem is some targeted funds were later shifted away due to the change of legislative views and priorities. An example is that library supplemental funds were trimmed, along with the reduction of base funding for library support (Green, 1984).

The State of Ohio has an 'Academic Challenge Grants' programme for all Ohio public higher education institutions to strengthen their strong programmes, as limited resources cannot make every programme top quality. The programme has empowered institutions to redefine and focus their missions. However, community colleges' primary objectives are to expand programmes to meet community needs rather than to improve academic quality. They could be offered other incentive funds than the Academic Challenge Grants (Folger and Jones, 1993).

These examples show that this type of funding incentive may be politically volatile. Objectives and priorities of legislators and higher education governing boards play important roles in determining the allocation of the categorical funds to higher education. Categorical funding is most appropriate when decision-makers at the state level have clear goals and strong commitments and when institutions will take the initiative to meet the state goals. It is least appropriate when goals are vaguely defined or too complex because institutions may take actions counter to those the incentive is designed to promote.

Competitive grants are funds allocated based on programme criteria and peer review of the proposals institutions submit for competition. The purpose of this type of funding is to encourage innovations from faculty and institutions. Funds are usually awarded for short terms. Afterwards, worthwhile projects may be absorbed into the base budget. The advantage of this approach is that both state and institutions are committed to the new initiatives. As the programme objective is regarded as important to the state, it builds motivation for success and provides recognition for successful programmes. Faculty are motivated to be creative and to maximize the desired goals at the given costs. Even when a proposal is not approved for funding, the institution may still take independent action. The disadvantage is that such grants are especially vulnerable to fiscal cutbacks. As they are temporary 'add-ons' to base budgets, the major patterns of institutional operation may not be strongly affected and may not produce on-going changes in individual or organizational behaviour.

The State of New Jersey made extensive use of peer-reviewed competitive grants for academic improvement during the period of 1984-90, awarding more than $50 million to a dozen different programmes. Most of the programmes were awarded directly to faculty or departments to put the funds in the hands of the people who must make the improvements. The competitive grants increased attention to undergraduates and classroom teaching and stimulated individual faculty entrepreneurship. But there were controversies about the programmes awarded. Faculty unions bitterly opposed this type of funding because it gave extra money to only some of their members. Some college presidents also opposed it because it diverted money from the colleges and made faculty responsive to state-wide priorities rather than the institutions' own interests (Hollander, 1991). When budget reductions were required in New Jersey in 1990-91, the competitive grants were one of the first items

to be cut. Former Chancellor Edward Hollander commented, "all of the programmes were closed, ostensibly causalities of the state's budget crises. The real reason for their elimination lay in the broad opposition to the programme by the colleges and universities" (Folger and Jones, 1993, p.19).

The State of Ohio had 'Programme excellence' and 'Eminent scholars' as competitive grants in the period of 1983 and 1991. Programme excellence was for undergraduate education improvement. Institutions submitted proposals to compete for funds and decisions were based on peer reviews. Between 1983 and 1991, awards totalling $12 million were made. The Eminent Scholars programme aimed at providing endowments to attract nationally and internationally known faculty members. The State provided funds of up to $500 000, for which institutions competed on the basis of the quality of their proposals and their ability to raise the necessary matching funds. On average, institutions raised about $1 million. Both grant programmes were eliminated in the 1991-1993 biennium, partly due to the state budget cut and partly due to the limits in matching funds that institutions could mobilize (Folger and Jones, 1993).

These cases indicate that institutions (like government itself) will commonly treat competitive grants as lower priorities than their base budget. Thus, such grants are the first to be abandoned in a budget crisis. Competitive grants can provide direct incentives to faculty and departments – a special strength when instructional improvement is the goal. Competitive grants are most appropriate when they empower administrators and faculty for institutional improvement. Funds must be allocated on a fair competition basis and eligible competitors must share similar goals and objectives.

Incentive funding (performance-based funding) provides additional funds for institutions based on the outcomes institutions have accomplished. In recent years, legislators and policy-makers have required institutions to develop assessment and performance accountability systems in higher education. Incentive funding is a way to reinforce this requirement. The purpose of this type of funding is to provide incentives to institutions for specific forms of accountability. Funds can be tied to the base budget or allocated as separate categorical initiatives. The advantage of this approach is that it has built-in accountability; it requires both the state and the institutions to agree on performance objectives and measures. It helps counter inefficiencies in the institutional operations such as high rates of student attrition and repetition. The disadvantages of incentive funding are that it is difficult to agree on the measurement of the outcomes as educational effects are multi-dimensional, and specific evaluation measures are hard to determine as the various stakeholders may not share a common understanding of quality. There is a danger that an institution will not do well on some measures and get unfavourable publicity, which, in turn, may hurt the institution's standing among potential students and other constituent

groups. In comparison with other incentive-based schemes, explicit incentive funding has not been widely used (Folger and Jones, 1993).

The State of Tennessee has a 'Performance Funding Programme' which is the oldest and most widely publicized programme of this kind. Funds are allocated based on performance measured by criteria such as major fields' examination scores, number of programmes having specialized accreditation, retention and graduation rates, and alumni satisfaction. Funds are awarded for up to 5 per cent of an institution's total budget for proof of performance improvement. More than $180 million was awarded to 23 institutions in the period of 1983-1992. Performance funding provides incentives to institutions to make improvement against their *own* past performance records rather than the records of other institutions. The proportion of programmes with specialized accreditation was increased and examination scores in the major fields were improved in some areas; however, average scores in general education showed little or no improvement over the decade of administration (Folger and Jones, 1993).

The relative success of Tennessee's performance funding lies in the consistent support from the state political arena: the governor, legislators, state higher education leaders and system administrators, and college and university administrators. Also, because it is a part of the budget formula and not an add-on, it is less subject to elimination when financial stringency occurs. In addition, it had faculty support from the beginning as faculty were concerned about their students' relatively low performance on national standard examinations. However, faculty did not agree on the indicators selected for measurement due to the problems in defining quality and the questionable reliability and validity of the measures proposed. Therefore, there has been minimal evidence of change at the classroom level (Folger, 1990). Faculty are inclined to accept positive ratings from graduates and reject test-score results as not being good measures of their curriculum. A common faculty attitude is that high marks from graduates are a more important criterion than test scores. This shows how using multiple measures may result in conflicting performance results (Folger and Jones, 1993).

In contrast to Tennessee's successful story, the State of Texas legislature attempted a reform of higher education funding in 1991 but failed. The purpose of the reform was to introduce a performance-based funding scheme by 1993. The process involved a series of state-wide legislative initiatives; for example, higher education institutions were required to submit their strategic plans with identification of expected outcomes; a Texas Higher Education Co-ordinating Board was established to develop an allocation plan for implementation; and separate proposals for performance-based funding were developed for different types of institutions in recognition of their variable missions and objectives. However, when the legislature convened in January 1993, the Budget Board drafted an appropriation bill that included performance-based funding as 10 per cent of the total higher education budget. Such

a high percentage deduction from the base budget dramatically reduced the support for performance-based funding from higher education institutions. After an extended debate, the whole issue was eliminated from the budget for higher education. The primary reasons for the failure were the lack of strong support and commitment from the legislators, and the lack of an appropriate concept of performance-based funding. The latter resulted in a high percentage deduction from the total budget and sent disincentives to higher education institutions (Bateman and Elliott, 1994). This shows that when using incentive funding, it is not only important to clearly define the goals and measures so that institutions may not be discouraged from making investments in improvements, but also necessary to balance the incentives for efficiency (adjustments to funding) and annual stability of an institution's base budget.

5. Summary and conclusions

The above presentation has reviewed a wide range of incentive instruments for funding higher education. The advantages and disadvantages of each government incentive scheme and experience have been discussed. *Figure 5.1* summarizes the impacts of each government financial incentive.

Figure 5.1 Impacts of government funding schemes

	Lump-sum grants	Formula funding	Categorical funding	Competitive grants	Incentive funding (performance-based)
Provide accountability	Some	Considerable	Great	Some	Great
Allow flexibility	Great	Great	Some	Some	Considerable
Achieve public policy goals	Some	Some	Great	Great	Some
Increase efficiency	Great	Great	Considerable	Some	Considerable
Decentralize management	Great	Great	Some	Great	Considerable
Increase quality of education	Some	Some	Some	Considerable	Great
Faculty involvement	Considerable	Some	Considerable	Great	Considerable
Equitable resource distribution	Some	Great	Considerable	Considerable	Some

Choice of an incentive instrument depends on the goals of policy-makers and how directly they want to control the behaviour of the higher education institution and its components. Nevertheless, these cases indicate that higher education institutions do respond expeditiously to financial incentives.

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The question is to what extent and how higher education institutions will make changes accordingly. Government incentives have evidently been successful in meeting social demands and relieving some of the government cost burden. But experience shows that higher education institutions have not built these incentives into their permanent management practices due to the political volatility of government incentives, as well as the supplementary nature of financial incentives. In addition, these incentive funding schemes, special-purpose funding in particular, have been used to an increasing degree by governments and policy-makers as leverage to influence institutional directions and shape new objectives for higher education. Many institutional leaders view these tactics as an invasion of autonomy or as coercive attempts by the government to make higher education institutions accommodate government's priorities (Folger and Jones, 1993; Morgan, 1992; Williams, 1995).

Higher education institutions are loosely coupled organizations in which professionals at the bottom of the organization have significant power and influence in what they choose to do. Given these organizational characteristics, management theorists argue that top-down, centralized state-level policies cannot penetrate the core of teaching (Morgan, 1992). Even Tennessee's case of performance-based funding showed minimal impact on faculty at the classroom level (Folger, 1990). Although there is a natural tension between the government and higher education in terms of autonomy and accountability, "the key to achieving both the necessary institutional independence and yet the willingness to change is for state leaders to create a climate that encourages the appropriate initiative from *within* the university" (Newman, 1987, p.70). A proper way may be to rely more on institutional judgement and provide institutions with flexibility in resource uses. At the same time, higher education institutions should try to be more accountable for the quality and services they provide.

Second, all concerned parties – the legislature, the state higher education agency, and the institutions – should agree on the goals and impact of the proposed financial incentives. Failure to include all concerned parties or to understand the implications of the proposed change may give rise to frustrations that will subsequently undermine the constructive efforts for change.

Third, providing financial incentives is an appropriate approach to fostering efficiency in resource allocation and utilization. The mechanisms through which governments transfer funds to higher education have an important effect on the way in which these funds are used. Too often in resource allocations, the government pays more attention to the political acceptability and horizontal equity among higher education and regions and populations they serve. Therefore, higher education institutions are not provided with incentives for efficient resource uses as they do not bear the cost of wastage directly. Offering financial incentives can encourage institutional leaders and faculty to

rethink past practices and to develop new ideas with more promising outcomes.

> "*One thing is certain among all of the variety of societies and education systems: individuals will continue to react to the incentives that they perceive, and planning which is not based on an active identification of these incentives and their effects is doomed to either futility or counter productivity*" (Windham, 1980, p.121).

As resources are always limited relative to demands, it is likely that governments throughout the world will continue to seek to control funding to higher education, demand greater higher education accountability, and reserve part of the funding for special purposes. Also, market-oriented operations and non-governmental sources of income will increasingly be encouraged in higher education management. Under such circumstances, to make financial incentive schemes work effectively in higher education management, it is important that goals be clearly defined, as ambiguous or complicated goals will divert the attention and make institutions take different actions. Incentives must be offered explicitly; explicitness enables participants to comprehend benefits and outcomes that will result if they comply. Institutions must be given great flexibility to allocate the resources, as internal reallocation is a way to achieve efficiency, and the people who are implementing the plan should know what decisions are best in their specific setting. Faculty must become involved in the budgetary process and programme development. Faculty involvement will often determine the success of an incentive plan.

Furthermore, cultural differences between countries and higher education systems must be taken into consideration when planning to implement any incentive strategies. For a country that has a long history of centralized decision making, even if the government wants to promote market-oriented approaches in higher education financial management, the institutions may not have the technology, knowledge, skills, or willingness to respond properly. Appropriate training should be provided. Government incentives will work best when they provide directions not judgements, encouragement not dictates, and when the detailed implementation of the incentive scheme is responsive to the goals and values of the higher education institution and its faculty and students.

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Chapter 6

Developing a participatory framework for local teacher incentives

Frances Kemmerer

1. Introduction

This chapter presents a framework for the school-based provision of incentives for teacher performance. It should be remembered, however, that schools exist in a larger environment that does much to determine:

(1) the incentives and disincentives for performance that teachers face;
(2) teachers perceptions of their incentives and disincentives for various types of performance; and
(3) teachers' perceptions of their responsibilities (i.e. their own performance standards).

Local efforts to boost or alter the effects of centrally provided incentive configurations must confront these realities explicitly. For this reason, this chapter begins with a description of the environment of schooling and of the context in which teaching and learning takes place. Next, the necessity of building a supportive community, developing teacher performance standards, and identifying appropriate reward structures is discussed. The chapter closes with an exploration of the implications of these local initiatives for central or regional educational policies. While much of this discussion is relevant for schools in developed countries, and draws on research in developed as well as in developing countries, the focus of the chapter is on schooling in developing countries and, particularly, on the least advantaged schools. Because of their geographical isolation, these are frequently remote rural schools.

2. The environment of schooling

Between 1980 and 1990, public expenditures on education in developing countries showed a modest gain except in the case of Sub-Saharan Africa, where they declined both absolutely and as a percentage of Gross National Product (UNESCO, 1993). Moreover, during the same period, structural adjustments resulted in expenditures increasing at a greater rate in basic education than in higher education, although the ratio of post-secondary to basic education per pupil expenditures remains high. This ratio is 8 to 1 in developing countries and 12 to 1 in the least developed countries as compared to 2 to 1 in developed countries (UNESCO, 1993). Within the basic education sector, the new funds have been invested primarily in promoting greater access and by 1990, even in the least developed countries, a relatively impressive seven out of every 10 boys and five out of every 10 girls started school (UNESCO, 1993).

The retention of children in school, however, has proven more difficult. School life expectancies (the number of years, including repetition, children are expected to remain in school) are often low. For example, in the five developing countries with the lowest expectancies, students remain in school on average only from 2.1 to 5.7 years (UNESCO, 1993). While cultural and economic factors obviously play a part in these expectancies, the role of teacher performance and school effectiveness in parental decisions to maintain children in school must be acknowledged. Moreover, the wisdom of policy commitments that involve trading off the provision of greater access for the provision of basic resources to existing schools is highly questionable. Access to inadequate resources (relative to goals) makes a mockery of equity and undermines efficiency (Windham, 1990).

In many of the least developed countries, the problems related to rapid expansion exacerbated by weak communication and transportation infrastructures, have severely strained both fiscal and managerial capacities. Fledgling central publication, distribution, training, and supervisory systems have often not kept up with the demands generated by ever larger numbers of schools, teachers, and students. Textbooks, even if available in the local language, often do not reach schools, or if they do, are generally not on time. Teachers with lower levels of educational attainment than in previous years are admitted to the teaching service. With little training, they are posted to schools; often in rural and remote areas. They are paid little and have low status (Hurst and Rust, 1990). Many teachers do not accept their assignments or leave remote schools before their terms are completed. Inspectors rarely have the funds needed to reach, much less work with, the most remote schools. The net effect of these 'facts' has been the decentralization of schooling, particularly rural primary schooling, in many countries, in fact, if not in law.

The lack of full financial and bureaucratic integration of schools within centralized systems means that local school managers have little formal authority, but bear major responsibility for acquiring resource stocks, supervising resource flows, and monitoring outcomes. It is not unusual for principals to travel for over a day (at their own expense) to request additional teachers, to report that an assigned teacher has not arrived, to secure textbooks, or to retrieve salary payments. Securing the minimum necessary human and physical resources, however, does not guarantee an effective school. Principals, frequently with little or no managerial training, must play a lead role in developing school-community relationships, supervising instruction, training staff, and establishing a climate conducive to learning. In order to carry out these functions, principals everywhere (but particularly untrained or under-trained rural principals) must find ways of maximizing the scarcest of all resources – management capacity. The first step in accomplishing this is to establish a community of interest; initially, within the school with teachers and students and then, radiating outward, within the larger community.

3. Building community

While primary schools, particularly in rural areas, are frequently located in what are 'natural' communities, that is, among groups of people bound by a common linguistic tradition and cultural heritage, the public primary school is often not an indigenous institution. Most likely it was created (or perhaps taken over) by central government and may appear less relevant than much older vehicles for acculturation such as religious groups, initiation rites, or apprenticeships within the extended family. The school, with its emphasis on secular learning and the participation of *all* children (girls and boys, local élites and local non-élites) may be perceived as alien and even threatening to local traditions and authority. Even if the school is perceived as neutral or beneficial in terms of the local culture(s), the principal must work hard to establish or maintain a community of interest if the school is to survive, much less thrive.

The term 'community of interest' means a community that shares a vision of what the school can do for the community's children. Building a community begins with the formation of a representative school council. Both the need for a variety of perspectives and skills and strategic political considerations suggest that every legitimate stakeholder group should be represented on the council. Exclusion forecloses opportunities for advocacy for the school, on the one hand, and limits demands for performance of the school and of the teachers, on the other (Gray, 1995). For example, exclusion of a representative from a non-formal adult programme may result in competition rather than co-operation in the search for both regional and local resources, as well as in reduced

pressure from other educators for school performance. The most dangerous exclusion, however, would be the exclusion of teacher representatives because of the centrality of teachers to school performance. Obviously, there may be trade-offs between inclusiveness and effectiveness. The size of the council must be kept small enough so that real discussion takes place, differences resolved, and decisions taken.

The process of vision building not only forms bonds among participants, but sets the basis for later defining the goals of the school, year-to-year objectives, and student and teacher performance standards. A vision, once developed and communicated to the larger community, must be compelling, realistic, binding, and complementary to government mission. It must be compelling so that community members are willing to send their children to school not only initially, but to ensure their continued attendance from day to day and year to year. It must be realistic, since not all children in every village will win places in secondary school or eventually work in the monetarized sector. It must be binding in the sense that it confers mutual obligations on the school staff and community members. Finally, particularly in formally centralized systems, there must be a reasonable fit between the local vision for the school's processes and outcomes and the school's legally defined mission.

Research suggests that the mere creation of school councils or the creation of shared visions, goals, etc., does not automatically resolve the school's performance problems. The efficacy of the application of what are essentially private sector models of 'high involvement-high performance' depends, in large part, on the extent to which schools meet the assumptions of those models. The so-called high involvement management models popularized in the 1960s in both the United States of America and Europe, emphasized: "flat organizational structures, enriched and often team-based jobs, cross training, sharing of information at all levels of organization, self-direction at the lowest level, few status differentiators by ranks, pay for performance and skills, and employee input into a wide variety of policies and practices, organizational goals, and methods used to improve performance" (Mohrman, 1994, p. 28).

As these characteristics suggest, implementation of the models requires the decentralization of, or the possession of, four key institutional resources: power, information, knowledge, and rewards. Power consists of the authority to initiate systemic change, including the redesign of structure, schedule, and work (Mohrman, 1994). As is discussed later, improving teachers' performance may require redesigning the school calendar or schedule or reorganization of the job itself.

Information is the very stuff of visions, goals, and performance standards. Possession of adequate information implies detailed knowledge of the schools' resources, processes, and outcomes and its standing relative both to other schools in similar environments and to the most effective schools. Such information to be useful must go beyond quantitative indicators to qualitative description of programme and

problem-solving strategies (Mohrman, 1994; Windham, 1993). An example of the minimum information set required is shown in *Figure 6.1*. It is the consideration of such information that aligns national and local visions, fosters agreement on goals and expectations, and channels energies toward specific purposes (Purkey and Smith, 1983; Wohlstetter and Smyer, 1994).

Figure 6.1 information needs

System level	*Local level*
Expected and average number of days in the school year	Average number of days in the school year over the past three years
Expected and average number of hours in the school day by grade	Average number of hours in the school day by grade over the past three years
Curricular goals by grade level	Teachers' curricular objectives by grade
Content, timing, results of national examinations by student characteristics	The fit between teachers' objectives and national curricular objectives
Student promotion, graduation, and admission to next higher level by relevant characteristics	Principal characteristics (age, training, experience, etc.)
Policies governing the selection, assignment, and dismissal of principals and teachers	Teacher characteristics (age, training, experience, subject-matter competencies, attendance, etc.)
Policies regarding inspection	Student characteristics (age, gender, other relevant characteristics)
Policies governing the distribution of material resources (including formulas, schedules, etc.)	Student average daily attendance (age, gender, other relevant characteristics)
Regional level	Student promotion rates (age, gender, other relevant characteristics)
Average number of days in the school year	Student completion rates (age, gender, other relevant characteristics)
Average number of hours in the school day	Student admission rates to next highest level (age, gender, other relevant characteristics)
Average achievement in national and local examinations	Materials availability in the school (texts, blackboards, desks, etc., per student/grade)
Practices regarding the selection, assignment, remuneration and dismissal of principals and teachers	Facilities characteristics (age, safety, space per student/class, degree of use, maintenance needs, etc.)
Practices regarding the distribution of material resources (including formulas, schedules, etc.)	Details of principal's role as instructional leader (observation, feedback, etc.)
Practices regarding inspection	Rationale for and details of job assignments
Student promotion, graduation, and admission to next higher-level rates by relevant characteristics	Past year's inspection reports (if any)
Descriptions of programmes/strategies used in the region to overcome the disadvantages of ruralify, etc.	

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Possession of knowledge refers to mastery of the critical competencies required for school decision making. In practical terms it requires the on-going development of school council members (Mohrman, 1994).

This might include in-service training in decision making and 'cross training' in areas of school life where some members have little knowledge and experience while others have a great deal (e.g. budget, maintenance issues, student discipline, classroom instruction, etc.). Finally, authority over rewards means that the council must have the ability to identify and reward (or punish) good (or poor) performance. Such rewards, as will be shown later, can be positive or negative, monetary or non-monetary.

Although high-involvement approaches to performance problems began as a movement designed to improve the productivity of manufacturing plants, by the 1980s they had been adopted by service sector organizations (Mohrman, 1994). The movement spread quickly to educational organizations and by 1994 an estimated one-third of the school districts in the USA alone had adopted some high-involvement strategy. These strategies, known variously by such labels as school-based management, shared decision making, and total quality management, all attempt to stimulate participation in decision making. They vary, however, in the groups of stakeholders involved (e.g. teachers, parents, civic leaders, business representatives), the level of authority delegated to the stakeholders (e.g. recommendations for policy versus actual determination of policy), the domains of decisional authority (e.g. instruction, student discipline, budget, scheduling, etc.), and the purposes served by these school-based groups (e.g. long-range planning, day-to-day management, etc.) (Ogawa and White, 1994).

As might be expected, given the variations in conditions of power, information, knowledge, and rewards, and in approach, research has failed to demonstrate a strong positive relationship between the 'use' of school-based management models and improved conditions in the school or district, or improved student performance (Ogawa and White, 1994; Torre, 1996). There is evidence from case studies, however, that where the assumptions of the models are fulfilled, performance problems are addressed in a more timely manner and are more likely to be overcome (Cresswell, 1993; Levin, 1994; Marsh, 1994).

If the assumptions of high involvement/high performance models, particularly those related to information and knowledge, are difficult to meet in developing countries, such models still represent an approach that is better-suited to rural isolation than are other school effectiveness approaches which rely on strong principal leadership, a highly articulated curriculum, or the availability of well-trained teachers (i.e. Effective Schools, Accelerated Learning, etc.). Building a community of interest by institutionalizing the pooling of capacity by principal, teachers, parents and civic, business, and religious leaders, is more likely than not to result

in better use of both central and local resources (e.g. money, volunteer time, local and distant apprenticeship opportunities for students, collaboration with other schools, and other social service providers).

4. Developing and enforcing standards for teacher performance

Once agreement has been reached on vision and goals, the next task of the principal, together with the teachers and other members of the school council, is to develop performance standards and annual performance objectives. Standards for teachers are specified first by identifying the most important performance elements in their jobs and then determining an appropriate range of behaviour. For example, attendance is a performance element. The desired behaviour relative to attendance at school might be attendance every day school is open, less one week regular sick leave and four personal days. Barring an emergency medical or maternity leave, teachers who attend less frequently than that simply do not meet the standard.

Figure 6.2 provides a list of performance elements stated to indicate the underlying standard and compares this standard to actual performance in a hypothetical case. Elements checked 'always' indicate performance to standard, while those checked 'seldom' or 'never' represent substantial performance deficits. After identifying performance elements, the next task is to determine the cause(s) of each of the deficits. Failure to reach school on time might be due to the fact that the previous head did not take punctuality seriously, or that most teachers have many miles to walk to the school, or that teachers need to finish farming chores before leaving home for school, etc. Each of these causes suggests a different remedy.

Thiagarajan (1990, p. 116) provides a useful classification scheme for probable causes:

- organizational deficits;
- job design deficits;
- motivational deficits;
- skill/knowledge deficits; and
- facilities deficits.

Organizational deficits are defined as the failure of management to provide the structures, resources, and processes that would be expected given a specific set of goals. Some of these deficits are systemic (e.g. untrained principals), others are school-based. To extend Dreeben's (1970) analogy, the macro- and micro-level organizational levels can be thought of as railroad switching yards, where staff resources of a given quality and quantity are matched with students of a given quality and quantity and material resources of a given quality and quantity to produce

a given set of results. Failures to provide the correct sets of resources or to combine them efficiently, act as constraints first on the school level and then on classroom-level productivity.

Figure 6.2 An analysis of teacher performance in a hypothetical school

Performance element	Performance			
	Always	Almost always	Seldom	Never
Basic professional obligations		x		
Comes to school as obligated			x	
Arrives on time for school and class	x			
Dresses appropriately			x	
Attends staff meetings			x	
Meets with parents			x	
Visits absent students' homes			x	
Works with other teachers				x
Works with school committees			x	
Works on identified performance deficits				
Classroom responsibilities		x		
Prepares lessons			x	
Uses a variety of instructional methodologies				x
Uses active learning methods		x		
Motivates students			x	
Demonstrates new skills		x		
Provides practice			x	
Provides feedback			x	
Reviews material			x	
Selects appropriate evaluation strategies	x			
Evaluates student progress			x	
Diagnoses learner problems		x		
Provides remediation			x	
Tracks individual progress	x			
Reports learner progress regularly to principal, parents		x		
Maintains discipline				x
Counsels students			x	
Treats students with respect				x
Makes supplementary materials		x		
Safeguards material and equipment		x		
Maintains physical order				

For example, it is not unusual in developing countries for the least well-prepared teachers to be assigned to rural schools. Within rural schools, it is not unusual for teachers with little training or experience to be assigned to the lower grades. Yet the lower grades frequently are the most crowded. They sometimes have in excess of 80 students for each teacher. As a result, the weakest teachers teach the majority of the students. Reassignments might be made that would optimize the teaching/learning environment and also equalize workloads. While local decision-makers cannot alter the macro-level teacher assignment scheme in the short-run, they can attempt to change local practice. Before a remedy is designed, however, they would do well to make sure they understand the rationale behind the school-level practice. In this case, the distribution of assignments within the school may be designed to reward experienced teachers. Choice of grade level and class assignments may be viewed by such teachers as an incentive for retention. To the extent that this is true and the experienced teachers in question are considered too valuable to lose, a remedy must be designed that improves the situation for both the inexperienced and experienced teachers.

Organizational deficits often go hand-in-hand with job design deficits. The conceptualization of classroom teaching has proved remarkably stable over time; one teacher per age-graded class is the norm, although at times one teacher per multi-grade class is tolerated. Unlike other organizations, schools are organized around teacher separation, not teacher interdependence (Lortie, 1975; Hurst and Rust, 1990). In the previous example, re-conceptualizing teaching to reduce the learning group size of younger students calls for teacher interdependence and use of such strategies as team teaching and peer tutoring. It should be noted that interdependence also results in a pooling of capacity and for that reason alone is theoretically preferable to teacher separation and isolation, especially in cases where not all teachers are fully trained.

The third and fourth types of deficit require little definition. Motivational deficits refer to the absence of both incentives for performance and disincentives for lack of performance. In most countries, once teachers have been given tenure, evaluations are largely pro forma; even if negative, there is little the school can do to punish counter-productive behaviours. Systemic constraints such as tenure, in fact, accentuate the importance of teacher-approved local rewards for desired behaviours. Peer pressure may effect what external authority cannot. For example, if the community pledges to raise additional resources if teachers work in teams so that younger students receive more attention, teachers who are excited about such an opportunity will try to win over those less interested or afraid to change their methods.

While motivational deficits indicate an unwillingness to perform, skill/knowledge deficits suggest an inability to meet performance standards. Such deficits are often derived from failures of the teacher recruitment and training systems. This may mean that teachers have only

slightly more years of schooling than the students they are assigned to teach (which is often the case in developing countries), or that the teaching profession is forced to recruit from among the less academically gifted (often the case even in developed countries) (Cummings, 1990).

Facilities deficits present yet another type of problem. Teachers may not be able to perform to standard in some domain (e.g. use of active learning methods) because of constraints imposed by the facility. There may be too little space per student or the type of space may be inappropriate (e.g. open to the elements, too noisy, no sinks for laboratory experiments, etc.).

Understanding the different sources of teacher performance problems makes it possible to design remedies that directly address those problems. These remedies include the removal of barriers to performance through restructuring roles and jobs, the facilitation of participation in government-sponsored in-service or on-service training, and the provision of positive incentives for some behaviours, and disincentives for still others.

5. Designing and monitoring local teacher incentive systems

Since incentive systems, by definition, are designed to influence performance, it is self-defeating to ignore the removal of constraints to optimal performance in favour of establishing a simple reward system. These efforts (the removal of disincentives and the creation of rewards) should be combined, whenever possible (Kemmerer, 1990). For example, one remedy for skill/knowledge deficits is to make use of every opportunity to send teachers to regional workshops or for certificate or degree training. Since the opportunities for such training are typically scarce relative to teacher demand, training can be used as a reward for performance to standard or for effort. Similarly, teachers who exhibit the most initiative and provide extraordinary service might be rewarded with the choice of classroom or given a community commendation.

In general, the effectiveness of local incentives and disincentives depends on their specificity, consistency, immediacy, and desirability. They must be specific to the performance element so that the link between the behaviour and consequence is clear to all. Consistency requires that countervailing pressures are not placed on teachers and related behaviours are treated similarly. For example, incentives should not be given both for designing activities that require students to use higher order learning skills, and for preparing students to take examinations requiring rote memorization. Similarly, if incentives are provided for teacher attendance in school, they should also be provided for teacher attendance in class. At the same time, the reward or punishment cannot be so far into the future as to have little current value; in general, the further away from the reckoning, the heavier the discounting.

Finally, it is important to remember that the value of any reward or punishment is determined ultimately by the individual teachers themselves, not the principal or council or even groups of teachers (Windham, 1978). For example, the opportunity of returning to school for a certificate may be the most valuable of all incentives for a young male teacher, but is worse than irrelevant for a teacher who is the mother of four young children who is not able to take advantage of it.

While the appropriateness of the incentives and the equity of their allocation are of less concern in a high-involvement framework, this example suggests that multiple incentives may be needed for some performance elements. For instance, in developed countries, private companies and some public institutions now allow individuals to select from a menu of benefits. Health benefits, for instance, can be traded for greater salary, vacation days, or child care. Individual choice does much to allay the invidious comparisons created by reward/subsidy systems that are designed to appeal to teachers with no mobility constraints (often, men) or to married teachers with families.

While incentives for individual performance or performance improvement should never be entirely ruled out, competition for rewards should not be allowed to undermine the functioning of the school community. Trials of merit pay systems in elementary and secondary schools have never lasted long, even in schools characterized by teacher separation rather than strong community. Although the difficult problem of evaluating performance and assigning credit for student outcomes has played a role in the demise of such experiments, they have frequently failed because teachers simply do not view merit pay as an appropriate incentive. Merit pay is considered divisive rather than supportive of communal efforts (Murnane and Cohen, 1986). Moreover, merit pay, at best, is linked only weakly to performance elements. Even on the post-secondary level, where 'merit' pay is more common, it is rarely used as an incentive for a particular type of performance or a reward for effort in a given performance domain.

The answer to the question of what motivators teachers want, depends to some extent on what they have. Where teachers are not paid a living wage and teaching remains a part-time, secondary job rather than a career, the necessary conditions for performance to standard may not exist. Providing such conditions thus becomes a community priority; government salaries must be supplemented or income-replacement benefits, such as housing, food, use of land provided, etc. Salary and working conditions, however, at best affect only two behaviours – entering into and remaining in teaching. The necessary conditions for performance are that teachers get what they want out of teaching. Johnson (1990, p. 320), in her study of teachers at work, reconfirmed Lortie's (1975) finding that the strongest motivators are intrinsic rewards.

> *"The matter of motivation in school work is complicated, both because incentives and rewards are so scarce and because the ones that matter most to good teachers are so elusive. The primary attraction of teaching and the incentive for good work continues to be the prospect of achieving success with children. Teachers look to parents, teachers, and administrators, and peers for reassurance and recognition that they are doing a good job and getting results. However schools are not well organized to deliver such assurances. Students seldom express their appreciation, if at all, until months or years after they have left a teacher's classroom. Parents often keep their distance from teachers, withholding both praise and criticism. Administrators are frequently removed from classrooms and fail to express genuine praise or gratitude for teachers' efforts. Meanwhile, teachers typically work in isolation that discourages peers from knowing how well [or how badly] they teach". Brackets added.*

Although, it seems, as Johnson says, a simplistic response to a complicated set of issues, the best incentives for performance are those that facilitate access to the desired rewards. This comes full circle to the need for community, beginning in the school, and extending outward to include all stakeholders. In the ideal school community, teachers are not only full members, but respected members of the community. Such a community draws strength from sharing purpose, identifying problem areas, and jointly addressing those problems by removing barriers to performance and celebrating improvements in performance in ways that are suited to participants' preferences at a given point in time. The justification for the effort involved in creating and maintaining such a community is that over time, as performance targets are met, standards for performance are raised.

6. Implications of a local teacher-incentive framework for regional and central government

There is increasing agreement that there is no single recipe for school and classroom productivity (Hanushek, 1994). While threshold levels of human and material resources are required to create a school, each school faces different challenges. Some of these challenges are related to staff characteristics, others to student characteristics; and still others to the combination of staff and student characteristics with the nature of the material resources (materials, equipment, facilities) available. The uniqueness of each school's context means that the local level, not the central or regional levels, has a comparative advantage, all

else being equal, in identifying and addressing performance problems and constraints to performance.

At the same time, higher levels of the system have a comparative advantage in providing threshold levels of core resources, research and development, and training and other support services. In terms of teacher incentives for performance, this might mean salary support, the provision of expanded training opportunities, the guarantee of appropriate instructional materials, the supply of information needed for self-assessment, basic research, etc. In brief, schools cannot be run or teachers supervised efficiently by distant bureaucracies, but they do need strong resource and technical support. Thus, if comparative advantage dictates decentralization of responsibility (and of power, information, knowledge, and rewards), it also suggests a much greater field role for central government. While the phrase 'top-down support for bottom-up reform' has already become a truism in decentralized developed systems where the support is largely verbal and the mandates many, it need not be. Indeed, it cannot be if more productive teachers in more effective schools are desired.

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Chapter 7

Incentives for student learning achievement

Jeannette P. Windham

1. Introduction

While far from the sole goal of education, learning achievement is one of the most important outcomes of education, both for the individual and society. The issue of student incentives for learning achievement involves the participation of individual pupils and their peers, parents, teachers, communities, and planners. This complexity of participation presents a strong challenge to researchers attempting to assess and improve motivational techniques that would maximize the learning opportunities for the pupils (Fuhrman, 1991). Incentives for student achievement incorporate not just the direct incentives for the pupils, but also the incentives affecting all those who influence the pupil's learning performance.

The main purposes of this chapter are (1) to introduce the macro-educational basis of student incentives; (2) to indicate the conceptual foundation for learning incentives; (3) to present key incentives which the literature implies are effective in promoting learning achievement (as well as examples of disincentives which interfere with such learning); (4) to emphasize the social context for learning incentives (with the presentation of the example of gender-based incentives); and (5) to illustrate the research needs that are a requirement for the development of more effective student incentive systems and to suggest how the macro-educational goals of nations can be more directly linked to incentive systems at the classroom level. The paper will conclude with a brief list of summary conclusions.

2. The macro-educational basis of student incentives for learning achievement

Given the wealth of recent research on student incentives and motivation, one must question why this scholarly effort has been

relatively unsuccessful in aiding educational planners to construct more effective school and classroom learning environments. The major obstacles to the formulation of equitable and efficient incentive-based planning systems for learning achievement appear to be:

(1) inconsistencies in research interpretations;
(2) multiple theories of what forms of learning should be measured and how this measurement should be made;
(3) conflicting perspectives on the nature of classroom motivation; and
(4) the uncertain interaction and communication among the macro-educational policies and micro-educational realities that exist.

The implications of the individual nature of learning, the dilemma of territoriality built into the education system, the existence of varied cultural contexts in increasingly democratized environments, and the problems of monitoring effects and adapting policy are discussed here in the generic context of the difficulty of linking macro-educational policy to classroom incentive measures. First, macro-educational planners must understand the incentive/motivation literature, and second, they must determine how to adapt this understanding to the formulation of specific educational interventions.

A more detailed understanding of the mechanisms of individual learning incentives is important in the rationalization of any education system. In the quest for a more efficient and equitable education system, educational planners and policy-makers must take into consideration both the positive and negative implications of classroom and school learning incentives on student motivation and achievement. It also must be appreciated that these interactions take place within the extremely complex school/classroom environment and include the key incentive roles played by the teachers and administrators, student peers, the home, and the community. All of these influences interact with the individual student's own values (preferences) and capacities (the ability to act on one's preferences) to produce a context for learning achievement that may be either supportive or antagonistic to stated learning goals.

One may occasionally find a learning environment where home, school, and community factors combine with the individual student's values and capacities to promote a consistently effective learning experience. However, this is unfortunately rare. Learning has always been and will continue to be strongly related to the circumstances into which the learner has the good fortune or misfortune to have been born, i.e. family, social community, and available schooling opportunities. One cannot expect schools to assist in resolving social problems without substantial support from the rest of society (Powell, 1996; Bhumirat and Arunrungrueng, 1991).

In this context, the policy-maker or educational planner must be able to understand how specific learning incentives affect student behaviour in the context of the existing community, home, and school influences. Only then can new incentive policies and practices be introduced to maximize the probability of the proper learning achievement being created and maintained. However, given the conflictual history of the incentives/motivation literature, a general consensus on the 'proper' incentive system may not be possible. While learning achievement, often used to measure the effectiveness of learning incentives, exists as a product of each individual student and classroom (the micro-educational reality), any policy and planning innovations attempted to improve incentives for learning must be based on probabilities, i.e. promoting the incentives that appear to have the greatest probability of aiding the learning process for the general student population (macro-educational policy).

Policy-makers and planners must interpret and understand the research on classroom learning before they can formulate appropriate policies at the macro-educational level for teacher recruitment and training, on information dissemination, and on school and classroom management and resources. To do this, those responsible for the design of macro-educational incentives must be aware of the conceptual structure that supports the use of incentives to affect student motivation and effort.

3. The conceptual foundation for learning incentives

The foundation for the present psychological understanding of learning motivation was created by the early work of Locke, Rousseau, Freud, Gessell, Piaget and other scholars in their research on the processes that occur in human development. Over the past 30 years, there has been a rapid expansion of the literature regarding student incentives in the classroom (Darling-Hammond, 1996). This work has used the principal research techniques of observation, clinical interviews, experiments, and longitudinal studies to address the issue of the determinants of learning in the school setting. The stated goal of such research has been to improve the learning environment for the child. Unfortunately, the wealth of motivation/incentive research produced to date would appear for the most part to have been relatively unsuccessful in assisting educational leaders in operationalizing improved classroom learning incentives.

Two major difficulties appear to exist. First, the research is inconsistent in its interpretations of the incentives that work. And second, planners and policy-makers have not fulfilled their responsibility of becoming knowledgeable about such classroom-level research. A better interaction of information and planning procedures must exist; only in this way can the desired improvements occur in the fit between macro-educational policies and practices and the micro-educational realities.

This situation of macro-educational uncertainty is not due to the lack of findings on the part of the researchers, but possibly due to the breadth of the student incentive issue and the very complex educational (and social) setting in which learning occurs across societies. Adding to this complexity is the fact that research on the concept and implications of learning incentives spans the disciplines of education, economics, psychology, sociology, child development, and public policy. To date there is little integration or even linking of theories, practices, evaluation, and administration. More meta-research is needed to identify and analyze common themes in the area of learning incentives and then to communicate these findings to the macro-educational planners.

A major challenge appears to lie in the conception and delineation of an agreed upon standard for the identification, measurement, and evaluation of learning incentives and their effects at the classroom level. Because of the lack of clarity from the literature, the application of effective classroom motivational strategies seems to depend largely on the intuition, common sense, and sensitivity of each individual administrator and teacher. Researchers may or may not use the same criteria or standards as these actors do in evaluating learning incentives and may differ greatly among themselves in theories of research design and interpretation. For example, in much of the research, the effectiveness of incentives is measured solely by achievement gains. This is a point of controversy both because of the multiple potential measures of learning and the methodological concerns with how well any given learning achievement standard can be measured.

4. Incentives for student learning behaviour

Given this controversy, the literature still offers some valuable insights into the relationship between the given context for learning and how external incentives can enhance or compromise a pupil's motivation to learn. For example, Hanson's (1994) study uses achievement of students as an indicator of learning success. She finds that a large number of potentially talented students do not achieve in the classroom because of implicit social stratification by gender, race, and class. She describes the mechanisms for sorting students (selection into ability groups, placement in given curricula, teacher expectations, class segregated schools reflecting unequal resources, and an emphasis on competitive learning) as powerful disincentives for certain pupils. Her research also confirms the important external incentives created by peer influences. Young people with friends who value education are less likely to experience "any form of lost talent" (p. 171), compared with those whose friends do not value learning. Her research further affirms that disadvantaged youths are less likely than those from higher socio-economic backgrounds to develop talent early. Even those who show

early signs of talent, but who are then stratified in the lower ability group, are less likely to realize their initial potential.

Clifford (1990) suggests that in the American and European education systems, class rank, grade averages, aptitude scores, and standard achievement tests describe, compare, and predict student learning, but they do not truly address and describe student learning motivation. Appropriate incentive measurements would assess factors related to self-concept, locus of control, past perceptions of failure or success, school enjoyment, etc. But measurement of such concepts has been used infrequently in the earlier literature and is not a consistent part of the current research dealing with student learning incentives and motivation.

Clifford's research also suggests the need for further study of the two motivational strategies of attribution and risk taking. Attribution refers to the assignment of causation for a result (for example, why a student achieved or failed to achieve) while risk-taking refers to the willingness of the student to engage in learning opportunities that have a less than certain outcome.

The literature on attribution as incentives can be summarized as follows:

(1) ability attributions for failure have undesirable effects on performance, emotions and self-perception;
(2) effort attributions lead to more desirable behaviours and attitudes than ability attributions; and
(3) strategy attributions lead to more desirable attributions than do effort attributions.

Stated in simple terms, pupils will respond more strongly if their past inadequate performance is not criticized as a result of poor ability or effort, but if an emphasis is placed on the need for an improved strategy to exploit their ability and effort. The main conclusions on risk-taking identified by Clifford (p. 76) are:

(1) students are low risk-takers in academic situations and prefer success to challenge;
(2) placing activities in the context of a game and allowing variable rewards will increase academic risk-taking;
(3) new tasks are more likely to be approached with a risk-taking strategy;
(4) academic risk-taking declines with age; and
(5) external incentives discourage risk-taking.

The interpretation here is that separating learning from its intrinsic rewards creates the danger of discouraging innovation and exploration because students focus their attention on the external reward and not on learning achievement itself. The finding that risk-taking declines over

time may suggest that student motivation is being adapted by the earlier experiences in the education system. External incentives, especially positive incentives that encourage students not to assume they have no chance to succeed, do have a place. The research indicates, however, that the incentives must be applied in a manner that does not discourage initiative and other forms of risk-taking.

The behavioural patterns described above may not be valid for students in all cultural settings, but they do provide a valuable example of how *patterns* of behaviour can be identified and that these insights can be disseminated as part of a macro-educational strategy to influence micro-educational effectiveness.

In their investigation of the effects of self-efficacy (personal esteem) and attitudes towards learning, McMillan, Simonetta, and Singh (1994) developed a set of instruments to measure these psychological components in K-12 students. The research findings confirmed their hypotheses that self-efficacy and attitudes toward learning and school in general, as well as attitudes towards specific subject areas or individual classes, are key variables that influence the level and type of motivated behaviour. Incentives must be designed to interact with these extant influences if they are to have the desired effects on behaviour.

Weinert (1990) suggests that learning can only be understood in relation to individual and social factors. Therefore, he proposes that relations between motivational constructs and cognitive, meta-cognitive, instructional, and social variables deserve special attention. He further suggests that there is a need for the development of improved methods for assessing motivational incentives as determinants *and consequences* of school learning. The ability for learning success and failure to affect future motivation to learn is not a new idea, but it does deserve more attention than it receives in many learning settings.

One often repeated contemporary theme in the discussion of classroom incentives is that "students hold the keys to their own learning" (Anderson, 1991, p.75). Research on incentives and motivation must give voice to the intended beneficiaries – the learners, and to how they are to be involved in the educational process. Pupils are not just passive recipients of incentives; they are themselves the major actors in the transformation of incentives into behaviours.

Each classroom exists as a research laboratory of student incentives (Anderson, 1991). While in this working laboratory the students may hold the 'keys' to their own learning, they may face a variety of 'locks'; their keys may not work in all the educational doors they face. In this setting, the teacher is often the catalyst for matching the students' interest and abilities with the expectations and opportunities of the learning process. Imaginative, well-trained teachers might strengthen student learning with a wide variety of incentive strategies. While students may wish a voice in what and how they learn, it is ultimately the responsibility of the teacher and school policy-makers, with the necessary support and co-operation of

the parents and the community, to set the definitive parameters for these choices.

This co-operative effort by all is required to communicate interest, caring, encouragement, and reinforcement in the student learning process. Yet, all too often, the espoused 'co-operative effort' is, in fact, compromised by the innate territorial instincts of the participating parties. While officially, the statement might be made that parents and other family are 'welcome' in the classroom, in actuality, parents may be made to feel they should not 'interfere' with the teacher-pupil relationship outside of selected, highly structured occasions. Nevertheless, basic dialogue and communication are desirable between all participants in the educational process. A genuine and concerted effort must be made to bring families and the community more effectively into the learning environment of the classroom.

Students and their families, however, are not the sole, or even the primary, source of learning incentives for many students. Teachers and school administrators are the social representatives in the educational process. But in too many classrooms, students are neither encouraged to pay attention or to show effort, nor are they rewarded for paying attention or for effort shown (Anderson, 1991). Too often, the classroom has become a custodial rather than a learning environment. Simple motivational techniques such as praise and recognition or, where negative behaviour makes them appropriate, sanctions, can be used as classroom incentives. Students in a structured learning environment, with appropriate supervision, monitoring, and feedback, will exhibit higher levels of enthusiasm for learning, spend more time involved in learning, and learn more. Policy-makers must be challenged to provide the administrators and teachers with the necessary training and support, and a school/classroom environment where appropriate learning can occur. Teachers must be trained to consider the effectiveness and costs of various incentive strategies and be willing to adapt them to the individual learning needs of the students (Anderson, 1991).

Other positive learning incentive inputs to be used in the classroom might include basic feedback and reinforcement, teaching students individual learning strategies and organizational skills, allowing students to monitor their own progress, and giving them undivided attention, supportive gestures, and verbal reinforcement (Anderson, 1991). Barnes (1988) suggests that establishing personal performance goals, clarifying positive teacher and student expectations, including all students in reward systems, quickly diagnosing and remedying individual pupil errors and misunderstandings, adding appealing elements to class activities, encouraging student awareness of their progress, and using self-enhancing activities, are some of the techniques teachers might use as learning incentives. It appears to be generally accepted that providing material rewards to students ('paying them to learn') is rarely as effective in the long term as those strategies that alter the students' perspective on themselves and the learning process in a positive manner.

However, purely intrinsic rewards (those based solely on the students' own values – which might not be congruent with those of teachers or administrators), may prove insufficient for motivating learning among some students. The design, development, and implementation of early intervention programmes for children should present a positive image of learning and schools. This might help to counter the unattractive depictions of schooling that have become common to the entertainment media.

In the classroom, extrinsic rewards (providing specific forms of recognition for good work) will commonly be needed for learning reinforcement (Chance, 1992). But these extrinsic incentives must resonate with the students' own values and capacities if they are to affect behaviour significantly and consistently. For example, it is not just the presence or absence of verbal reinforcement that is important for some students. The amount of reinforcement has been found to have a measured impact on the arousal and maintenance of attention processes (Vallerand, 1987).

Students also need honest feedback on their performance from the earliest grades. Informational incentives, that is, helping the students understand why learning is important and how they can become more effective learners, are usually necessary for initial learning to take place. Such rewards have been shown to be effective and have long-term benefits (Chance, 1993). Most important, such initial informational incentives may have the effect of structuring the students' later intrinsic values, making it easier for subsequent teachers to motivate the students or to depend more on their self-motivation.

A summary of key points from the literature on student motivation and incentives should include the following:

(1) an attempt at planning incentives for student achievement should recognize the multiple forms of such achievement and the other forms of educational outcomes that may compete with academic performance;

(2) multiple extant incentives exist in a student's environment from home, peer, and community influences and learning incentives will complement some of these and compete with others – school and classroom incentives are only partial determinants of student behaviour;

(3) careful use of attribution and risk-taking incentives can be supportive of learning achievement, but administrators and teachers will need to be trained in their use;

(4) incentives can facilitate learning but disincentives can result which will constrain learning achievement – distinguishing between the two is not always obvious;

(5) students have the ultimate control over, and responsibility for, their own learning, but the educational context must maximize the probabilities of successful performance;

(6) a co-operative effort is the only means to create an effective incentive system and the only guarantee that the macro-educational goals will be properly linked to the micro-educational incentives;

(7) rewards must be clear, consistent, and sufficient and feedback provided early and often in order to affect learning behaviour significantly; and

(8) macro-educational planners must become more aware of the literature on school and classroom motivation and incentives and incorporate these insights into their planning strategies.

The following section will discuss the broader cultural determinants of how incentives may vary among different populations.

5. The cultural context for learning incentives

No incentive or set of incentives to promote student achievement will work in all contexts or even at all times within a given context. Again, the planners, administrators, and teachers are forced to observe and adapt to the realities of the actual individual learners and classroom experiences. Awareness, diligent monitoring, imagination, and adaptation are all necessary prerequisites in designing effective incentive strategies. However, the most effective incentive strategies might require different incentive sets for different individuals or groups within a single classroom. Therefore, any strategy developed requires further flexibility, sensitivity, and creativity on the part of the teacher to encourage the learning process most effectively.

As was noted earlier, the students themselves are a critical cultural determinant of the effectiveness of any incentive strategy. A recent United States of America field study by Thorkildsen, Nolen, and Fournier (1994) suggested that young children favoured incentives linked to the values of responsibility and co-operation. Interviews with primary school students attempted to measure the children's reactions to different intrinsic and extrinsic rewards as motivational factors. The children's responses indicated a strong desire for involvement and responsibility in the learning process, both in their own interest and that of their peers. This study reinforced the earlier findings of Nolen and Nicholls (1993) which reported that students thought that motivation would be stronger if the teachers encouraged students and helped them to find their work meaningful (e.g. by promoting co-operation, increasing interest, giving responsibility to students, encouraging thought and improvement, and minimizing pressure). Praising outstanding performance, attributing failure to low effort, and negative reinforcement were all considered less effective practices by the students. Both studies suggest that children should be respected as thoughtful moral agents and they should be allowed input regarding fair classroom standards.

The reactions expressed by students in other settings may be quite different due to factors such as social status, race, ethnicity, or gender. The research confirms that there are multiple views even within a single classroom as to what children perceive as fair. However, if one assumes that a perception of fairness by students is related to the effectiveness of certain incentive strategies in the classroom, then teachers (and macro-educational planners) have an obligation to understand the students' values when implementing an incentive strategy for motivating students.

When one involves children in learning incentive decisions, one must also consider the parents or guardians and their values and beliefs regarding the learning experiences of their children. Parental responses and involvement are often difficult to anticipate within a single culture let alone across cultural boundaries. While many American parents tend to be rather vocal regarding education policies and practices, school systems in other countries have historically enjoyed a greater autonomy regarding direction and management. With greater development and movement toward democratization in some countries, this condition may change and the automatic deference paid to the teacher and the school may be reduced. However, where the cultural traditions of deference are strongest (in much of Asia, for example), the family may maintain its traditional reluctance to 'interfere' in the school process. Even in these contexts, though, parents may not wholly support the choices made by the macro- or micro-educational decision-makers on behalf of their children. Planners and teachers in all countries must recognize that with decentralization and increased democracy will come a greater obligation to provide information to the family and to create and maintain dialogue with them.

A recent USA case study points out the sensitivity of the parental involvement issue in a democratically designed school system. A programme was created to define goals in mathematics, science, and humanities, emphasizing competency, critical thinking, and independent learning skills acquisition, and encouraging students to pursue an understanding of their personal strengths and weaknesses. A parent challenged the educational programme, claiming it encroached on their parental privacy and child-rearing responsibilities because the programme dictated specific values, ethics, and cultural norms other than their own. This opposition brought political pressure to change the programme (Harp, 1993).

At present, one is less likely to encounter such a problem in more tradition-based societies. These societies view education differently in that motivation and incentives for educational choice are more collective in nature. "Schools are primarily held responsible for developing academic skills, and the social skills required for integration into group life; the home is responsible for supporting the school's role and for providing a healthy emotional environment for the child. Parents and teachers work together, but do not duplicate one another's roles". (Stevenson and Stigler, 1992). Whether this clear division of labour between these parties can be maintained as average parental education

increases is not certain – more highly educated parents are less deferential to schooling authorities. Similarly, if education's ability to meet family expectations should falter, family deference may decline. The pace of the change in this relationship between families and schools is unique to each cultural setting, but the direction of the change – towards broader and more intensive family involvement – is generic.

The topic of classroom incentives for student achievement, its inherent subjective nature, the individual nature of learning, and the social and material differences in the learning environments within and among nations, make cross-cultural studies of motivation extremely challenging for researchers. The researchers must be sure to operate within the contexts of the varying social demands on education and the diverse perceptions of the process and of the individual actors' roles. But the cross-national studies are useful for establishing patterns of success and failure in settings which are natural laboratories for a variety of learning incentive approaches.

Cross-national surveys rarely produce definitive recommendations, but can provide valuable insights by identifying effective methodologies for raising educational achievement. A study of literacy instruction and achievement across 32 countries and five continents revealed few stable and consistent relationships across the participating countries. In determining literacy levels, the unique country circumstances were far more important than were common factors among the countries (Elley, 1994). The next step is to examine the country factors that contributed to success and to determine if they can be generalized or adapted to other settings.

Based on the work of Super and Harkness (1986), Gauvain (1995) proposes a framework for organizing cognitive developmental research of this type in relation to culture. She proposes that the traditionally divided concerns of cognitive development and the socio-cultural context be considered in tandem. She does not dismiss or diminish either area but recommends a reconciliation of non-culturally based achievement findings with culturally based investigations.

The development of such a framework allows for integrating and linking learning incentives in classrooms with the specific cultural contexts. This integrated framework might aid both macro- and micro-educational decision-makers in understanding why certain incentives work in one context but not another, and how the incentive approach can be adapted to the specific learning environments of different societies or different cultures within a single society.

These studies reinforce the conclusion that learning achievement incentives can be understood, and the learning environment effects on issues such as locational and gender equity (see below), can be addressed only in relation to the individual learners and the social factors acting on them. The global diversity of these social contexts may range from one extreme of isolated cultural settings with minimum external exposure, to another of internationally shared media and information. Satellite

transmission of radio and television can create a new and broader cultural context for the previously isolated community and school.

However, if the media message received is one that paints a very negative image of intelligence, learning, and discipline, then the opportunity posed by this technology is compromised. In some countries, this question of the public image or perception of learning, the classroom, and the school system opens a new area of concern for educational leaders and policy-makers (Bhumirat and Arunrungrueng, 1991). What positive interventions are available for countering these media-generated negative – and at times hostile – values towards learning? Since the values the child brings to school are a major determinant of what incentives will or will not work, the media is joining the family, the community, and school peers as part of the incentives nexus the teacher and planner must consider.

The present problem of low student motivation, noted in many developed nations, is a social concern that will become more common in developing nations in the future. Increasingly, parents and schools face the effects of a 'youth culture' that competes with families and schools in influencing youth perspectives. Learning incentives, especially those that emphasize intrinsic motives, frequently fail to overcome the negative incentives of this culture which undervalues traditional forms of achievement, both in school and in later life (Powell, 1996). As stated above, schools are constrained by the social context in their attempts to use incentives to affect learning behaviours.

A special example of the cultural context of incentives is the issue of gender and how incentives and motivation may differ between male and female students. While the gender issue of incentives is just one example of the complex cultural context of developing incentive strategies, it is illustrative of how diversity must be accommodated in incentive planning.

For example, much of the past research on gender and education has focused on gender differences in participation, performance, and achievement in scientific areas of study. Traditionally, in most cultures, males have outnumbered females in the fields of engineering, computer and information science, mathematics, and the physical sciences. At the same time the percentage of women in areas such as education, home economics, language, and psychology, has exceeded that of males. While the gender gap in academic achievement in mathematics may have improved slightly in recent years, in the area of computer science the traditional gender biases unfortunately appear to have evolved with renewed vigour (Shashaani, 1994).

A review of the literature on attitudes towards computers at the secondary level reveals persistent gender differences favouring males in computer-related classroom activities. Some of the reasons for this bias may be traced to parental beliefs and attitudes. Parents still express different aspirations and expectations of sons and daughters and, in turn, influence the young child's motivation, attitudes, and performance.

Although sometimes very subtle, the effects are long lasting and damaging to the opportunities of the female student. This problem is made worse by the fact that often classroom teachers continue to behave differently towards boys than to girls in learning situations, in spite of the attention recently directed to the incentives inherent in these practices. Studies also show that most computer software is designed by males to appeal to males, without considering how to best motivate females (Shashaani, 1994).

Cross-cultural comparisons are especially informative and useful in examining differential learning environment effects on females and males. Warwick and Jatoi (1994), in their study of teacher gender and its effects on students in Pakistan, examined survey data that seem to indicate that the gender of teachers, students, and of school peers significantly affect student achievement in mathematics. In gender-segregated schools, they found that males had higher mean scores than females, but about the same as males in co-educational schools. Interestingly, in urban schools, female teachers and students actually had an achievement advantage. Their analysis of the educational level of the teachers, where the schools were located – urban versus rural, and the incentives and techniques used by teachers, led the researchers to conclude that the inequity in student achievement by gender was due not to male/female teaching abil[illegible] differences, but to the inhospitable environments for female teachers in some of the school settings, and cultural influences constraining the abilities of females to teach effectively.

The Second International Study of Mathematics (reported in Hanna, 1994), in a survey of secondary mathematics students in 20 countries, revealed a great deal of variation in gender differences among countries and between age cohorts. Of the countries participating in the study, nine of those surveyed [Canada (British Columbia; Ontario); France; Hong Kong; Israel; Luxembourg; Nigeria, New Zealand; the Netherlands; and the USA] exhibited gender differences in favour of boys. In five of the populations surveyed (Belgium-Flemish, Belgium-French, Finland, Hungary, and Thailand) girls were slightly higher in mathematics achievement than males. In five additional countries (England, Japan, Scotland, Sweden, and Switzerland), no gender differences were found. Of special note, the two countries, Hungary and Israel, where the greatest difference in achievement occurred, boys and girls reported the greatest disparity between parental support (motivation) given to boys relative to that given to girls.

Since in some cultures mathematics has traditionally been considered a masculine field, it is thought that parents give more support to boys in learning mathematics than they do to girls. Because boys are more readily supported in regard to their accomplishments in the social arena, it is critically important for girls to receive encouragement and parental support at home (Hanna 1994) and for consistent backing of their interests in mathematics to occur in the school setting.

Although a great deal of rhetoric has been generated and, indeed, in some cases a concerted effort has been made towards equal learning opportunities for girls and boys in many developing nations, positive progress in this area has been frustratingly slow in many cases, perhaps due to the deeply entrenched cultural biases and stereotypical images of females in these cultures. Cultural perception of the female student and of the female mind can create powerful learning disincentives for the female student. In order to create more appropriate and equitable learning opportunities for females, learning incentives must be generated that are at least equivalent to those for males. Incentive efforts in the classroom must be combined with external awareness and participation, i.e. early intervention education, parenting skills education, sensitization and monitoring of male peers, and community involvement in changing the traditional female image. Girls must be given equal opportunities to take leading positions in school in the mathematics, computer, and technical fields, and learning environments must be continuously evaluated and monitored to ensure equal opportunities to excel exist in all areas of study for all students.

It must therefore become the task of education policy planners to readdress gender and equity issues in the classroom learning environment and in the community. Teacher training materials and classroom learning materials, including computer software, must be re-examined and improved; teacher, community, and parental biases must be addressed and a dialogue created to encourage greater fairness with respect to the gender-bias issue.

The ability of planners to adapt to gender and other cultural contexts of learning will be addressed in the following section.

6. Linking macro-educational policy to classroom incentives

It is a simple matter to assert that incentives in the classroom and their effects should be considered by macro-educational planners. It is considerably more difficult to specify exactly how this should be done.

All incentive-based planning must be grounded in an understanding of the social, psychological, and economic forces acting upon the individual learners. Policy planners have an opportunity to play a key role in altering existing incentive policies that are not working and to create an atmosphere in which newly identified incentive strategies might thrive in order to provide the best possible learning environments for students.

For the economist or policy planner, the greatest weakness in the economic analysis of educational production relationships has been the excessive reliance upon macro-educational data (national, regional, or school district) to examine processes which take place almost exclusively at the micro-educational level (the individual school, classroom, or student) (Windham, 1990).

Unfortunately, educational psychologists have yet to evolve a theory of learning which can be used as a basis for allocative decisions by planners or teachers; sociologists have too often confused causality with correlation in work on the determinants and effects of learning incentives; political science research is still in a predominantly descriptive, rather than diagnostic, phase; and economists have tended to slight reality for quantifiability in the analysis of learning effects. At the micro-educational level, there is a need to clarify, link, and sequence the current research on classroom incentives. Cross-cultural comparisons will be extremely useful, and the potential value of experimental and innovative programmes must be measured. However, the major constraint on research and policy remains the individual nature of the learner-teacher interaction. In addition, more needs to be known about the incentive effects generated or modified by the influence of the family, the community, and the larger society. Given the subjective nature of learning incentives, the goal is to identify strategies which work in various contexts and to provide the individual teachers and school administrators with the skills and understanding to make use of these insights.

Clifford (1990) summarizes the potential contribution of research to policy as taking three forms: narrowing the gap between theory and practice; accelerating the refinement of theory and practice; and enhancing the receptivity of practitioners to research findings. The latter is a crucial concern. While basic research continues to grow, an inadequate effort has been made to prepare the research syntheses and policy interpretations which will indicate to practitioners (from national planners to individual classroom teachers) how to use this information in their work. This failure in linking research to policy and practice must be redressed.

A further example of how improved macro/micro linkages might be made is suggested by the CRESS (Centre for Co-operative Research and Extension Services for Schools) model developed for California (Wagner, 1995). Based on an agricultural extension service model, CRESS has worked towards improving system communication and co-operation across the education system's various levels. The four policy perspectives basic to the CRESS model are:

(1) Research reporting and community building: Involving parents, the community, and the schools.

(2) Programme costs and credibility: Financial and political support depend on the credibility of the programme and public understanding of the connection of expenditures to effects.

(3) Collaboration and restructuring: Creates a network of university-based researchers, teacher training and preparation programmes, and extension personnel (supervisors) to implement and monitor programmes.

(4) Programme complementarity: Promotes national, regional, and local integration and co-operation among programmes, administrators, and planners as well as teachers.

CRESS is only one example illustrating how an integrated structure of research and planning may be created. A similar structural design model might be considered useful by educational planners, who are trying to bring some organization and coalescence to the field of learning incentives.

7. Summary conclusions

Before any incentives structure to promote learning achievement can gain acceptance, the following summary points with regard to student learning incentives need to be considered:

(1) learning incentives must be built upon the student's attitude towards learning and the value of education, and must recognize community, family, and peer influences;
(2) learning incentives are often cultural-specific and special concerns, such as gender and race, may occur even at the school and classroom level within a given society;
(3) classroom incentive theories, including the impacts of both intrinsic and extrinsic reward systems, need to be further refined and then communicated to the practitioners who can use these new insights in actually influencing student learning behaviour;
(4) training programmes for administrators and teachers are necessary to prepare them to respond sensitively to both the psychological and physical needs of the child;
(5) parental incentives – including attitudes towards learning, the value of education, the image of education they promote in the home, their willingness to be involved, the form and nature of communication and co-operation with educational authorities – are a powerful influence on student motivation and should be part of any incentive system to promote learning achievement; and
(6) similarly, community incentives – especially the communication between the community, parents and schools, the development of strategies or campaigns for liaisons and volunteers, and mobilizing financial support for educational activities – are all means of reinforcing the incentives for individual students.

Educational planners have the opportunity at this time to affect the incentives themselves by playing a role in the more efficient organization

and dissemination of incentive research information and providing better linkages and communication among incentive-based research and researchers. An easily accessed body of comprehensive global incentive research could be a starting point towards better organization and communication of an important area focus affecting learning worldwide. Planners can further affect motivation of all educational participants through using appropriate macro-educational incentives in their own policy-making decisions.

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Chapter 8

Incentives in special education

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As educational planners continue to struggle with the issue of achieving educational equity and efficiency, it has been suggested that an approach which systematically examines incentives and their effects on these objectives may provide a more effective planning methodology in which these goals are finally realized. Such an incentive approach requires the identification of existing and potential incentives within the education system and offers these incentives as a set of causal factors over which planners can exert control. This approach combines the basic tenets of an economic perspective on human behaviour with the recognition of the constrained environment for choice in education. The purpose is to integrate these two perspectives on how education systems are structured and how this structure affects implementation and, ultimately, student learning.

As the process of applying this incentive approach to general education evolves, it will be important to consider what relevance incentive-based planning might hold for special education activities. This education sub-system is important to include not only because of the critical equity and productivity concerns the disabled students represent, but also because special education, by its very nature, requires larger per-student expenditures of resources. These factors combine to justify a closer examination of how the assessment of incentives might address some of the issues involved in providing special education opportunities that are both more equitable and more efficient.

This chapter will begin with a discussion of the example posed by the existing legislative mandates for special education in the United Sates of America. The discussion will proceed to an interpretation of how these incentives enhance and/or detract from the provision of special education at the school and classroom levels. This will be followed by a comparison of incentive systems in the international community, focusing on their implementation procedures and performance criteria. Finally, summary recommendations will be presented that address some of the key issues

that continue to present difficulties in the delivery of special education services.

1. Legislative context

Macro-educational incentives for special education in the USA have generally taken the form of either national laws designed to serve as protections of the rights of disabled people, or government grant monies that flow in support of these mandates. These legal mandates have also been endorsed and/or formally adopted at the sub-national level in the USA. Again, this is done in an effort to guarantee the rights of the disabled in a variety of settings – educational, social, and economic.

Perhaps the most important of these national mandates for educational structures and incentives for special education is the Individuals with Disabilities Education Act (IDEA), initially adopted in 1975. In brief, IDEA ensures the right to a "free and appropriate public education" to those infants and toddlers (ages 0-2) and children and youth (ages 3-21) who meet the definition of having a disability defined within the established 13 categories of disabilities. Examples of these categories include learning disabled, emotionally disturbed, speech impaired, mentally retarded, deaf, and other health impaired. The IDEA legislation ensures procedural safeguards in relation to the referral, evaluation, identification, classification, and placement of children with disabilities in the "least restrictive environment", that is an environment most like that of their peers who have no disabilities. The least restrictive environment provision of the law is formally defined as a placement in which removal or non-inclusion in the regular educational environment occurs only when the nature or severity of the disability is such that even with the use of supplementary aids and services, education cannot be satisfactorily achieved. This placement of a child in the least restrictive environment shall "provide the special education needed by the student, provide for education of the student to the maximum extent appropriate to the needs of the student with other students who do not have disabilities, and, be as close as possible to the student's home" (Part 200 Regulations, 1993).

The IDEA legislation's aforementioned requirement to "free and appropriate public education" has been defined to mean that any special education services that are provided "are provided at public expense, under public supervision and direction, and without charge; they must also meet the standards of the State Educational Agency, include pre-school, elementary school or secondary school education in the State involved, and, be provided in conformity with an Individualized Education Plan (IEP) that meets all of the federal requirements" (Part 300 Regulations, 1993). These two stipulations, "least restrictive environment" and "free and appropriate public education" establish the basis in the USA. for decisions regarding placement of students with

disabilities. The wording of these mandates is broad in scope and vague in explication, however, which results in multiple interpretations dependent on individual state or locality priorities and fiscal capacities.

Many other federal and state laws have evolved that are consistent with this landmark legislation. Examples are the Rehabilitation Act (1973) and the Americans with Disabilities Act (1990). The major provision of the Rehabilitation Act is to guarantee that "no otherwise qualified individual shall solely, by reason of his or her handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any programme or activity receiving federal financial assistance". Although school systems are subsumed under this legislation, the Rehabilitation Act is more global in the areas in which it prohibits discrimination against disabled persons. The Americans with Disabilities Act is similar in intent to the Rehabilitation Act, although even broader in scope, in that it extends the rights of the disabled population to include arenas such as private industry (firms that employ more than 15 persons), public entities, and public accommodations.

Since the passage of these legislative mandates, a body of case law has also evolved which supports and provides interpretations of this legislation. All of these legislative mandates have functioned as powerful incentives for states and local educational authorities to provide a form of free and appropriate public education to all students with disabilities from ages three to twenty-one in the least restrictive environment.

In a similar pattern, and in an effort to ensure implementation of these laws, federal and state grant monies attempt to reinforce these mandates. With this funding comes a concomitant set of new incentives, in the form of regulations on how this money must be allocated. While local educational authorities, of course, have the opportunity to decline this source of revenue, the high cost of meeting the mandates for educating disabled students provides a compelling reason to accept these grants within the pre-established parameters. Special education is perhaps unique in the degree to which its programmes and services are regulated in the USA, reflective of an excessively macro-educational approach to controlling a programme that should, by its very nature, be extremely responsive to individual needs. This inherent conflict between centrally mandated standard rules and a multitude of diverse individual contexts presents difficulties that will be discussed in detail later in this chapter. The incentives that exist at the national and sub-national levels in the USA, as in several other industrialized nations, limit the degree of programme flexibility that local education agencies may exercise, despite the fact that these local authorities have specific financial constraints and disabled student populations.

2. Incentives in support of special education

Although many practitioners may argue that the national and state mandates introduced in the USA have been cumbersome to implement and too often have had little to do with the actual quality of the education and the level of student learning, the mandates have, in fact, provided a well-established legal foundation for the collective rights of disabled persons to an education. The Individuals with Disabilities Education Act has resulted in several crucial improvements for disabled students. Prior to the adoption of IDEA, only a few states in the USA assured a "free and appropriate public education" to disabled students, while subsequent to this legislation all states have endeavoured to do so. Students with disabilities had traditionally been kept at home or institutionalized, reflecting a lack of knowledge and understanding of disabilities and how best to accommodate these conditions within public education. By the mid-1900s only 12 per cent of all children with disabilities received any form of a special education (Ballard *et al.*, 1992, cited in Smith and Luckasson, 1995); in the 1992/93 academic year, 95 per cent of all students with disabilities were served in regular public school buildings (USA Department of Education, 1995). Teacher-student ratios have decreased in the area of special education since the implementation of IDEA, reflecting an improved understanding of the unique and individualized needs of this population of students. Other efficiency indicators of student learning as identified by Windham (1988), including attrition rates and school achievement measures, have also improved for this population since 1975 (CEC, 1995). In addition, not only have improvements been made in the transition planning (preparation for employment) that occurs for disabled students, actual employment rates have also improved during the past 10 years.

Greater numbers of disabled students are attending colleges or other post-secondary settings and receiving accommodations for their disabilities while there. The American Council on Education reported that the number of disabled students entering college rose dramatically (from 2.2 per cent to 8.8 per cent of the cohort) from 1978 to 1991 (USA Department of Education, 1995). There continues to be progress made in the achievement of a "least restrictive environment" for disabled students. IDEA also mandates the involvement of parents and families in the development of Individualized Education Plans (IEPs) for students, and encourages them to be active participants in their child's education (CEC, 1995).

The IDEA, Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 mandates establishing strong incentives to public schools to provide appropriate support services and an educational programme that is comparable in quality to those received by the non-disabled student population. The federal and state-level case law in the USA also offers specific interpretations of these sometimes

ambiguous laws, and ultimately provides a strong message to local school districts that complying with these regulations is not only in the best interest of disabled students, but is also the local authority's legal responsibility; non-compliance can and does result in sanctions that are often severe (Shoop and Dunklee, 1992; Morris, 1989). Organizations that are found not to be in compliance with these mandates risk the loss of funds that are provided from the federal government.

Without these mandates and stimulative incentives, it is difficult to know how well, or to what degree, states or local education agencies in the USA would have taken it upon themselves to improve the quality of this education subsystem. The history of special education prior to the implementation of IDEA is sufficiently disappointing to lend credence to the need for such critical legislation and to be sceptical about the level of success that would have occurred without a change in the incentive structure. So, given these important improvements, it is difficult to argue against the necessity of some form of central incentives on behalf of the educational rights of the disabled. A case can, however, be made against the excessive bureaucratization that seems to have accompanied the guarantee of rights. This latter development may, in fact, result in a compromise of the objectives of improved student learning for disabled students.

The major stimulative incentive that exists in the USA for special education programme planners is the grant funds provided by the federal and state authorities to the local education agencies or school districts. These funds arrive with a set of monitoring requirements stated in terms of how the funds can be spent for programming. Initially this form of financial assistance was provided by the federal government in conjunction with the passage of IDEA; it was recognized that states and local education agencies would have a difficult time complying with the mandates for special education without some form of assistance. Consequently, grant funds became attached to each of the legislative mandates. The major funding is targeted for students, ages three to twenty-one, who have been identified by the local school district's Committee on Special Education (CSE). The membership of the CSE is carefully prescribed by federal and state mandates; it must be comprised of the referred child's teacher, the parent of the referred child, a person who is qualified to teach or administer special education, the school psychologist, and, at times, a parent advocate. Upon hearing the results of an extensive evaluation process, the CSE decides whether the child qualifies within the parameters established by the federal and state regulations as having a condition that affects the ability to learn or to receive an education in a traditional setting.

Specific amounts are awarded to local education agencies based on a set of formulas (see Chambers and Parrish, 1996). In general, funding levels are established by weightings that are assigned to students based on either their programme category or the classification of their disability. The weightings for special education students average approximately

twice those for regular students, although the specifics of this vary by state and disabling condition. The assignment of different weightings to the various disability categories is intended to improve vertical and horizontal equity and to promote the fiscal neutrality of this funding (Odden and Picus, 1992). Some states vary slightly from this generalization in that they assign weightings based on intensity of services (determined by student-teacher ratio and/or time spent in regular education) provided as opposed to the simpler method of utilizing only the student's disability classification. Although not perfect, this does provide a more cost-sensitive method of assessing actual per-pupil expenditures (Robinson, 1996).

While these funding formulas certainly offer a financial basis for providing special education to the disabled student population, there are still many concerns that exist with this methodology as evidenced by the multitude of studies that have been done to assess equity of financing as well as how the formulas affect programme quality (Odden and Picus, 1992; Robinson, 1996; Parrish, 1996; Verstegen, 1996; Chambers, Parrish, and Hikido, 1996). As these grant monies exist as a very powerful incentive to local educational authorities, it needs to be determined whether, as currently structured, this system functions effectively in terms of its eventual impacts on student learning. Ultimately, it is attainment of the desired levels of student learning that requires first priority, and which should influence all financing decisions (Windham, 1990). So, even if noble in intent and generally equitable in structure, the use of grant funds as incentives has the potential to be quite ineffective and, in some cases, even to detract from the actual provision of required instructional opportunities for special education students.

Recent data indicate that the numbers of students with disabilities that are being serviced in public school settings continue to climb (CEC, 1995). In the 1993-94 school year in the USA, this percentage rose by 4.2 per cent. It is difficult to know whether this increase can be attributed to better screening and assessment abilities, or whether it is somehow connected to the flow of money guaranteed for special education students. Funds from special education and Title I (monies provided for compensatory education in reading and mathematics) comprise the largest source of federal and state grant money for many local school districts, and maintaining a clear distinction between student instructional needs and local district financial needs may be difficult.

A potential conflict of interest seems inherent in such a funding mechanism or incentive, in that higher numbers of students identified as disabled results in greater funding levels. Given that aid is provided on an average-cost basis, and that economies of scale may exist in the delivery of special education services, there is the temptation for local authorities to classify students into categories where they will pose the smallest marginal cost or where the ratio of external funding to actual cost is greatest. Given the inherent imprecision in the classification process, such adaptation to funding incentives is not unlikely. In the light of the levels

of funding involved and the profound issues of equity and productivity that are attached to special education programmes, the issue of the potential disincentives in this activity needs greater examination.

3. Disincentives in the provision of special education

Windham (1980) provides a reminder that centrist planners never completely control the outcomes of policies, but rather these outcomes are also determined by the millions of micro-educational decisions that are involved in the implementation of these policies. That is, individual motivations, abilities, and the existence of either extrinsic and/or intrinsic incentives all affect the degree to which, or the effectiveness with which, policies are implemented on the 'ground level'. Without such awareness of the inter-relatedness of these two powerful factors, policy planners may never understand why particular initiatives which appear rationally sound prove ineffective in implementation. This approach demands an appropriate combination of macro- with micro-educational planning and a concomitant understanding of how incentives affect implementation at all levels. This argument is particularly salient in the area of special education, as macro-educational-level decisions are required to create standards for funding and performance and to assure equity; however, the success of these macro-educational decisions will depend on the nature of the micro-educational response to the incentives that are created.

As presented above, educating the disabled student population in the USA has required a macro-educational-level intervention and advocacy, which was manifested in the form of central government mandates and funding. It is difficult to argue, however, against the assertion that this form of education must be highly individualized and person specific. This level of specificity is difficult if not impossible to achieve through policy planning that exists at such a global level. Although these federal mandates or incentives have proven to be necessary, there are several reasons for maintaining these as guidelines, rather than as strict mandates to be followed under threat of sanction. It is often the individual practitioner's perception of incentives that affects decisions regarding implementation; in special education, this system of incentives has evolved to such a degree of complexity that, at the micro-educational level, they are perceived as confusing, cumbersome, intimidating and non-responsive to individual (local authority, institution, or student) need. While central-level involvement is necessary in terms of establishing and protecting the rights of disabled individuals and in the provision of the funding which makes this education possible, the decisions regarding specific programming for districts should be delegated primarily to those most closely associated with the needs and priorities of these students.

Peng (1994) asserts that planning for all marginalized groups, including students with disabilities, requires the initial identification of the specific educational needs of that group. In special education, as is

often the case with regular education, the cognitive and educational needs of the students are uncertain. The fact that these individuals suffer from abnormalities in cognitive or physical development is accompanied by the fact that practitioners do not always have a clear understanding of the etiology (the cause or origin) of a student's disability and hence how best to remediate for it. What is available in the research on special education is a collection of theories and practices of effective strategies that can be applied broadly, albeit not always effectively, to the interaction of a teacher with a disabled child. If one recognizes the reality that even regular education does not always effectively address the wide range of abilities inherent in the general student population, then it is not surprising that this difficulty is exacerbated even further when attempting to teach students with cognitive or physical functioning that is impaired to the degree that they cannot even function within the broad behavioural parameters established for the general education population. Little enough is known about how children in general actually receive and process and utilize information (how they learn); even less is known about children who possess abnormalities in their neurological and cognitive functioning. Although the research on brain-based learning is exciting and expanding, frustratingly little is still known about the mechanics of learning on the cellular or neurological level.

What is relevant here, and so critical for this discussion, is the understanding that learning, by its very nature, is an intensely personalized experience, and one that takes place most effectively if understood and respected as such. Thus, it is a process that is not amenable to macro-level planning, nor are attempts to make it so likely to be successful. Within the appropriate policy guidelines established at the macro-educational level, it is a more effective utilization of resources to allow for the specific development of education systems based on a micro-educational planning approach that can be designed with local authority, school, and individual student needs in mind. Although this is true for all education programme planning, it is particularly relevant for special education programming which must be student and disability specific.

Another example of a potential disincentive in special education programming is the directive to provide a "free and appropriate public education", which is an integral and oft cited component of the Individuals with Disabilities Education Act. All states that receive federal funds for the education of their disabled students must comply with this incentive that is presented in the form of a legally enforced mandate. A review of subsequent case law, however, provides an indication of how confusing and ambiguous the term 'appropriate' has become in determining what a child requires and/or needs in order to be able to access this public education (Shoop and Dunklee, 1992).

The act of issuing a mandate, but leaving it in the form of a somewhat oblique directive, subject to multiple interpretations, has resulted in many disagreements (and extensive litigation) regarding the

exact meaning behind the mandate. What is 'appropriate' for one district or student may not be for another, which leaves little room for standardization or clarity of expectations in terms of required programme provision. While it may have been a beneficial incentive if states and local education agencies were truly given the freedom to interpret this mandate as they deemed necessary, instead it has turned into a legal battleground which has left local authorities fearful of potential litigation and liability. This has forced a timidity which seems to govern decisions about placement and programme perhaps more than a realistic appraisal of what is best for the student within the limited resources of a district.

A recent example in New York State illustrates the confusion that can emerge in multi-level disputes. In 1993, the State Department of Education took away from local school boards the authority for special education and gave it to the local Committees for Special Education. This was done in line with federal mandates that the control of special education decisions should be made by the CSEs, in part to avoid school boards allowing financial concerns to become paramount in classification or programme provision decisions. However, the State Supreme Court held that the Education Department had violated state law in taking the authority for local education away from the local school board. Unfortunately, this 'victory' for the local authorities could cost the state US$ 160 million because the state is now no longer in compliance with the federal mandate. The point of this example is that mandates from higher authorities should not be so written that they countervail state or local law, unless reforms of such laws are an explicit goal of the mandate. Failure to plan the incentive properly in terms of the micro-educational context, results in confusion and waste – neither of which serve the interest of the disabled student population.

The quantity of litigation required to clarify the intents of IDEA and ADA has resulted in a perception at the school level that special education law is inconsistent and often lacking in sound logic. This situation has had the unintentional side effect of fostering decisions that are based more on the potential legal ramifications rather than what may be appropriate based on the specific assessments of the educational professionals. The stipulations of these federal regulations are sufficiently detailed and confusing without further complexity introduced by the court system. At present, special education is so thoroughly regulated and leaves such small room for local adaptation based on local need or priority, that the incentives result in an expensive but often ineffective educational opportunity. Such a system cannot be thought of as adequately meeting the needs of the local authorities or individual students. What has been created is a detailed set of rules and regulations interwoven into a regulatory bureaucracy so complex that it is difficult to see that the end goal of all of this activity is, or at least should be, student learning.

Federal regulations govern the following aspects of educating children with disabilities: child identification and evaluation procedures;

classification procedures and categories; Committee on Special Education meeting procedures, memberships, and time lines; facilities; personnel and personnel development; participation in regular education; IEP components; due process rights; least restrictive environment mandates; specification and definition of services; the transition from pre-school services to school-age services; and student to teacher ratios. This list is not exhaustive, but rather provides an example of the extent to which this form of education is regulated in the USA. Many of those who are the actual providers of these services would agree that the bureaucracy associated with special education has outgrown its usefulness and now functions more as a negative incentive that is perceived as inhibiting the effective delivery of specialized instruction. The effect of the supplemental funding is often offset by the constraints placed on individualization and adaptability of programmes.

In addition to the issue of the role of macro-educational-level decisions and the ability or inability to implement these incentives at the micro-educational planning level, it is important to consider how these incentives affect those most responsible for carrying them out and the likelihood or potential that individuals might be motivated enough to implement them in the spirit in which they were intended. Incentive-based planning requires an understanding of how policy decisions affect the people who must implement them. This includes an understanding of what might motivate them to help produce the desired goal of student learning. Given what is known about human nature and the feelings of power, satisfaction, and commitment that come with control, one might conclude that allowing for more discretion and control at the local level would help foster this motivation. So, not only does it make more sense in terms of adapting macro-educational policies to respective local needs, an incentive approach allowing greater local authority would appeal to the human element as it influences implementation and hence the success of any policy initiative. Such an insight is exciting in that it recognizes the inter-relatedness of policies and the individuals they affect on a multitude of levels (Fuhrman and O'Day, 1996).

Planning for any marginalized group includes the examination of alternative delivery systems which can meet those needs and a concomitant assessment of the costs associated with these services (Peng, 1994). This process in special education is dictated by the pre-established continuum of services that federal and state mandates prescribe for students with disabilities. There are 13 categories or classifications that students must fall within in order to qualify for receipt of special education services. It is not uncommon to assign a classification to a student who only 'fits' some of the criteria, but for whom this does not represent an accurate diagnosis or description of his/her disability. This occurs because the ambiguity inherent in these nationally defined classifications allows for multiple interpretations based on programme availability, parent input, and the potential educational stigma attached to different classifications. It also results from the simple fact that individual

disabilities are in fact very person-specific and often defy generalizations or classifications. Based on these classifications, students are generally grouped into classrooms that the system hopes will address their academic needs. This classification not only carries differing degrees of social stigma, (for example 'speech impaired' is seen as much less stigmatizing than 'emotionally disturbed'), but also provides differential funding related to level of programming. Thus, it is not a decision that is made lightly, but it is one that is often made only in general terms. This again provides an example of how national and sub-national mandates (macro planning) can fall far short of providing relevant and appropriate programming that is specific to individual student needs. The disability label, which is imposed according to federal laws, often serves as the driving force of a child's entire learning programme, and does not induce a thorough examination of the individual's strengths and weaknesses. If there is truly a commitment to increasing student learning, the use of this classification system is limiting and cumbersome in the amount of attention and energy it detracts from what should be the real issue.

There is an additional disincentive that arises out of the classification system for disabilities. Districts are reimbursed according to established formulas for the number of identified special education students which it serves. There is no incentive for attempting to prevent the need for classification, with all of the social and academic stigma that it invokes, or for providing preventive services of any kind. It appears logical that it would be more beneficial to the student to prevent the need for this type of labelling, and simply to provide the necessary academic accommodations to meet individual learning needs. Instead, the current system requires that a student must demonstrate a history of academic failure before he/she can qualify for special education services and receive the additional funding for the provision of these services. Not only does this approach maintain a retroactive stance that attempts to remediate rather than prevent failure, it is also an inherently inefficient use of resources. Preventive services that are provided early in a child's school career can alleviate the potentially harmful personal frustration and negative attitude toward learning that often accompany learning difficulties. The early intervention can also save a significant amount of resources in that services that are provided in this more timely manner are often less costly in the long run. Unfortunately, local authorities have no control over this incentive funding and no way to access it other than by classifying children as having had difficulty for several academic years. This would be a potentially effective area in which to allow districts more individual control over allocation of resources.

If local education agencies were able to exercise more control over these resources, there would be an inherent incentive to utilize these funds as efficiently as possible. As this system is currently structured, there is no financial incentive to adapt services more specifically to student need, nor to work towards the eventual discharge of students from special education programmes. Incentive funds flow as a direct result of the

number of classified students, the greater this number, the more a district receives for the provision of special education services. Funding levels are also dependent on the intensity of services provided to students; this criterion also creates a situation in which districts are not encouraged financially to lessen the degree of programme service for a student. If funding were not dependent on these factors, perhaps local education agencies would create educational programmes that were developed with only the educational needs of the student in mind instead of concerns regarding the funding flows that might be attached to these decisions. By structuring incentives in this manner, it would be in a school district's best interests to programme and educate as effectively as possible so that the educational needs of a student would be met, and this student might potentially be discharged from this programme, resulting in a net saving to the local authority and a better outcome for the student.

School failure is a concern for schools and for society; costs are incurred not only for the duration of a student's academic career, but also when this student is not able to function as a productive, contributing member of society after leaving the education system. A more decentralized locus of control and discretion would also encourage a prioritization of student need at the local level, which could be more relevant and appropriate than the mandates directed at the national level. It follows that if this prioritization of need were allowed to occur, that local education agencies would have more of an incentive to utilize the available funds in the most efficient manner possible.

Such a restructuring would also encourage a more intense evaluation of the processes involved (teaching methodologies) in an effort to improve outputs (student learning). This would occur as a result of the incentive to provide educational services in the most efficient manner possible; the achievement of this goal would have a direct effect on the net cost to the district. A school district would have the potential to realize the goal of providing special education in the most equitable and efficient manner possible as well as improving student learning, both of which are critical in the functioning of an effective education system.

Another area within special education services that is highly regulated, is the type of programming options that must be made available to special education students. Students are required to be placed in settings described as the "least restrictive environment" which specifies that students must be educated in settings that are most like those of their non-disabled peers and included within the regular education programme to the greatest possible degree. Within the past decade there has been a tremendous movement to implement what has been called an 'inclusion philosophy', which purports that all disabled children can benefit more academically, socially, and emotionally from being in placements with their non-disabled peers. This often translates into a directive that districts may only place students in a more restrictive setting if they have demonstrated an inability to succeed in the regular education programme even with "the use of supplementary aides and supports". Again, this

mandate was issued in an attempt to protect against the unnecessary segregation of the disabled student population. The effects of this inclusion movement are currently the object of controversial debates regarding its academic effectiveness as well as the impact it can have on the regular education classroom. During the past five years regular classroom placements for students aged six through to 21 years have increased by almost 10 per cent nationwide (USA Department of Education, 1995).

Those who support inclusion for disabled students caution that it can only be done if the district actually does support the placement of these children in regular education placements by providing the supplementary aides and supports that are described in the regulations. A dilemma arises, however, as a result of the discrepancy in funding flows that accompany these placement decisions; there is a lack of financial incentives provided to implement this mandate. That is, districts are not reimbursed beyond the normal allocation based on weightings that are given to students in a particular classification group, even if the child's placement in a least restrictive environment requires the use of supplementary resources (such as the services of a one-on-one aide). In New York State, for example, the student's programme must exceed a designated amount (currently $10 000) in order to qualify for special reimbursement rates as a 'high cost student'.

Thus, the district is legally required to provide a programme for a student for which there is currently no corresponding external financial support. Such 'unfunded mandates' are popular with politicians since they can take credit for creating new 'rights' for categories of individuals, but the politician leaves it to a lower level of government or to individuals and private organizations to figure out how to fund this new right.

As Robinson (1996) points out, the programming categories can be misleading and not truly reflective of the level of services actually provided according to the student's Individual Education Plan. He argues that funding formulas should be more reflective of the actual level of services provided rather than of classification and programme placement. There is currently an attempt being made in several states to modify this funding mechanism so that it supports and encourages districts financially to fulfil the legal mandate.

Finally, it is sometimes difficult for local authorities to programme for disabled students in a placement that is consistent with the least restrictive environment philosophy but one that is also cost-effective. It is not unusual for districts, particularly in rural areas, to have students that are so unique as to defy appropriate grouping in any existing programmes. An example of this can be found in students who are disabled with psychiatric illnesses, for whom there are frustratingly few services available because of the low incidence of this type of disability. Instead of having the flexibility to provide for them within home districts on an individual basis, districts are often forced to send these students far from home so that they can attend a programme that is as close an

approximation of what they need as possible. It is not unusual for such students to spend two hours travelling each way to and from school. If districts do decide to programme for them within their home district, they are almost literally forced to design an entire programme (complete with teaching staff) for one student.

Peng (1994) describes the final step in planning for special education as selecting the most cost-effective option for each student. For special education, this involves attempting to remain within the parameters of these federal mandates while still finding a programme that is appropriate and affordable. Historically, however, the issue of cost-effective programming has not been raised in any sustained manner for the disabled student population.

Federal regulations governing the utilization of funds in special education programming demand that these monies only be used for excess costs, which are those costs above and beyond the minimum per-pupil expenditure that a district would spend on a non-disabled student. During the Fiscal Year 1994, $2 149 billion was distributed to states in the USA for the provision of special education to children with disabilities through IDEA. The average per-child allocation has remained relatively stable over the past three years, and was $413 in Fiscal Year 1994 (USA Department of Education, 1995). Funding for this group of students increased by $87.4 million in Fiscal Year 1994, but this increase in aggregate allocation was offset by increasing numbers of students in special education. During the 1993-1994 school year, there were 5 373.077 identified individuals with disabilities from birth, up to 21 years of age, served by this funding. This represented an increase of 4.2 per cent, the largest annual increase since the adoption of IDEA, indicating that the programme is both large and growing rapidly.

Again, while this funding system represents a powerful incentive for districts to guarantee programming for students with special needs, it also has an effect on local financial sustainability in that the funding does not adequately cover the actual expenses required for some special education students. There are a great number of bureaucratic procedures associated with obtaining approval for specific programming that involves 'high cost' students. The local authorities must seek such approval after the Committee on Special Education has recommended these programmes and services. However, there is also no guarantee that full or even a significant percentage of the funding will be forthcoming. The uncertainty of the funding makes it difficult for local education agencies to plan programmes efficiently. Committees on Special Education are recommending programming based on student need, but the district remains unsure as to what level will be reimbursed.

When this occurs, inevitable disagreements begin over the issue of whether cost should be attached to programming decisions for these students. Although the national mandates require a local education agency to provide an 'appropriate' education for disabled students, it does not require them to provide a programme that guarantees an achievement of

maximum potential for these students. Aside from the ambiguity in interpreting this definition of 'appropriate', districts are placed in the very difficult position of having to make decisions regarding the allocation of resources for disabled students in a context of financial and legal uncertainty. The chronicle of districts going into litigation and the emotional and financial costs associated with this for all parties contribute to the district's reluctance to proceed to that level. Perhaps even more of an issue is the extreme difficulty inherent in assigning cost-benefit ratios to particular students, programmes, and rates of student growth. With no objective criteria, the focus becomes meeting the law rather than the student's actual needs.

There are many procedural safeguards in place that govern the structure of inputs and processes in the system of special education, while scant attention is paid to outputs or accountability. The incentives that exist within this system are excessively focused on procedural requirements and seem to neglect the goal of student learning. Although the standards movement is gaining momentum nationally as it applies to regular education programmes and students, most educators are reluctant to apply these principles to special education students. This reluctance perhaps originates in an unwillingness to project expected rates of growth for such individuals, as well as the aforementioned recognition that the etiology of many disabilities is not fully understood.

The result is one does not have an accurate understanding of what might be expected in terms of student growth. Educators are tentatively beginning to discuss this issue as it applies to special education (Ysseldyke, Thurlow, and Shriner, 1992; LaRue, 1995). This process seems critical as this sub-system of education evolves and attempts to make itself more accountable. The fact that special education requires such a disproportionate percentage of funding is a compelling enough reason to force an examination of how equitably and efficiently these resources are being utilized.

The political dilemma originates with the difficulty in assigning cost-benefit ratios to children and families who have obviously already suffered a great deal by having to accommodate a disability within their family life. It will be a politically unpopular discussion to question the existing mandates and programmes because public sentiment will make it difficult to suggest any limitations to potential services to the disabled, especially if the limitations are based solely on the costs involved. It also will be extremely difficult to agree on what outputs can or should be expected from these services or on standards that should be applied to these programmes. This is due in part to the fact that a definitive knowledge base does not exist for these difficult decisions. No one will welcome having to discourage or prevent the continuous striving for growth in each of these children, or to preclude the potential for such even if it is not currently visible. However, the tremendous increases in the numbers of special education students and the concomitant costs incurred with providing programming within the mandates prescribed by

federal law eventually will force a discussion of this sensitive and emotionally loaded topic. When the discussion does occur, it has the potential to increase the effectiveness and efficiency of resources that are clearly limited in all countries around the world. It will be difficult to attempt to balance the needs of a few with the needs of the majority; this is a good example, however, of how the cost issue has been separated from the issue of the rights of this population.

While the American experience with special education may in some ways be a unique one, it does offer important lessons for both developed and developing nations that are planning to broaden their special education programmes. The lessons learned are both positive (the importance of recognizing the rights and potentials of all students) and negative (the need to emphasize the student more than the bureaucratic requirements). Each country may need to adopt and adapt from this experience to meet its own nation's requirements and capacities. The next section provides some further examples of special education from outside the USA.

4. International comparisons

Although most countries in the world have some form of education system in place to address the academic needs of disabled students, there have been very limited attempts to understand special education as a global phenomenon (Barcham and Upton, 1993) or to draw comparisons in an effort to increase the knowledge base and understanding of various delivery systems. There is, however, a large volume of information to be shared potentially within the international community which could result in improved student learning for all disabled children (see, for example, Thorburn and Marfo, 1994). Halls (1990, cited in Barcham and Upton, 1993) asserts that a comparative study of education can provide a broader perspective on this system, and increase the understanding of the various social, cultural and economic forces that affect the implementation of education. There is also the opportunity to share information regarding effective practices, from which many nations can benefit. The review of the literature conducted by these authors produced a limited amount of information with a true cross-cultural analysis of special education. The information that is available provides descriptive analyses of the structure of special education systems, from which inferences can be made regarding the existence of incentives and the degree to which they affect programme implementation.

There are many similarities in the incentive structures in special education that exist in developed nations throughout the world to those that have been established in the USA. In fact, there appears to be a positive correlation between these similarities, and the degree to which a nation is developed and has the concomitant resources to be able to guarantee this right to an education for the disabled and subsequently

ensure the delivery of this right with any degree of equity. The USA is unique, however, in the degree to which these rights are mandated and regulated at the national and sub-national levels.

As stated, the USA provides a guarantee for a free and appropriate education for all disabled students, from the ages of three to 21 years. The incentives for local school districts to do so come in the form of legislative mandates and financial incentives. A review of the literature indicates that most other developed countries have passed similar legislation that addresses the rights of disabled students to receive a free public education that accommodates their specific disabilities.

In all European countries, legislation was passed within approximately the same time frame as the Individuals with Disabilities Act in the USA (Magne, 1992) and similarly guarantees the rights of disabled children to an education. The number of years that a child has this right to an education varies by country, and can last anywhere from less than six years to more than 15 years. In fact, the European community can be viewed as being at least as progressive as the USA in its mandate to provide this education in as integrated a setting as possible. That is, most of these countries are attempting to provide this specialized instruction within the regular education programme. There was enabling legislation in the 1960s and 1970s which facilitated attempts to integrate this population, particularly in the Netherlands, Belgium, and the Federal Republic of Germany (O'Hanlon, 1993). This effort did not begin in any concerted way in the United Kingdom or Ireland until the 1980s and then was closely followed by other members of the European community such as Spain, Portugal and Greece. Today, there is an effort to co-ordinate information and to improve general conditions for special education throughout the European community, as evidenced by the existence of the European Association for Special Education and other non-governmental organizations (Magne, 1992). These legislative incentives are supported by a commitment of resources that flows from the national level down to local municipalities, and enables these local education agencies to implement that which is required by law.

By comparison, legislation was not passed in Japan until 1979 that firmly established the right to a public education for their disabled student population (Narita, 1993), even though there had been more general laws enacted prior to that time which provided the basis for the establishment of schools for the disabled. As of the 1979 legislation, disabled students were guaranteed nine years of education within this system. This mandate is supported with the funding that is provided by the national government, prefectures and municipalities at approximately nine times the rate provided for the education of its regular education students.

Norway has a well-developed system of providing education for its disabled students, and began mandating this as early as 1969 with the passage of the Education Act, which required the integration of disabled students into regular education schools. This law also specified that these students must receive specialized instruction if they could not benefit

from the ordinary classroom experience. Although Norway began its system of providing special education with a very centralized approach, since 1986 it has been committed to a more decentralized, locally controlled system of implementing this education (Solli, 1992). There was a recognition that this education might be more effectively and efficiently provided if local objectives and priorities provided the impetus for specific programme structure and design.

Another critical characteristic of Norway's incentive structure is its recognition that "limited economic resources should be utilized in such a way that the best solutions can be found for as many as possible" (Solli, 1992). That is, given the acceptance of limited resources and the necessary acknowledgement that providing an education to any student, but particularly disabled students, requires a concomitant utilization of these limited resources, a conscious association of cost with service is required. Many developed countries are now realizing the high cost of guaranteeing a 'free and appropriate public education' to all of their students, to the degree that it has been regulated and enforced. It is unrealistic to assume that such a small proportion of the population can require a potentially disproportionate percentage of available education budgets without having a possibly deleterious effect on the provision of an education to other students. Norway's incentive structure allows for more local decision making and prioritization of funding allocations based on more accurate understandings of district populations and potential to benefit issues as they pertain to individual students.

In most developing nations in the world, the provision of special education is certainly less regulated at the national level than in developed nations and, if it is regulated, it is not unusual for these guarantees to be in the form of nominal rights as opposed to effective rights. There appear to be many factors that affect the provision of special education in developing nations, including population size, high birth rate, geographic distribution of the population, and social and economic conditions that exist at the present time (Afrooz, 1992). For example, in Nigeria, there is a policy in place that is similar to the USA's IDEA, but due to factors associated with the culture, socio-economics, and current politics, this population in fact is not well served (Obiakor and Maltby, 1992). If these conditions are not favourable, the education of all students is adversely affected, but in particular the needs of the marginalized population of disabled students appears to be the most neglected. The governments in many of these nations are so transitional, that policies regarding education are often neglected in favour of more politically immediate issues. Similarly, in Iran, there is a legal basis for the provision of special education as contained in its constitution, and there is a national policy which encourages the education of all disabled students and protects the rights of this group. In effect, however, the implementation of this policy has not been realized, due to shortages in human resources in the form of specialized teachers, insufficient facilities, and lack of public knowledge of the effectiveness of special education (Afrooz, 1992). Disabled

students are integrated into the regular education programmes but more as an attempt to access any form of education rather than to receive specialized instruction. Iran does appear to be making attempts at the national level, however, to improve the effectiveness of its special education system.

China is an example of a country which has only recently instituted national incentives to provide for the educational needs of its disabled student population. Although there have been schools for the deaf and blind for over a century, it has only been in recent years (1990) that this education has been made compulsory (Armfield, 1992). As in many developing countries, there is no formalized system for evaluating and identifying students with special needs in China, so it is difficult to estimate the actual number of students with disabilities. The issue of adequate resources makes it difficult to enforce the provision of special education in any systematic or effective manner and the laws in China commit no national funds to the delivery of this mandate. Rather, schools there depend on financing by provincial and local governments, and even local businesses. The difficulty that China and other developing nations are having with implementing this system of special education highlights the critical difference between asserting a guarantee to these rights to an education and actually being able to ensure that this guarantee is fulfilled. It is easier to guarantee these rights than to guarantee the resources necessary to ensure their delivery, but the former retains little substantive meaning without the latter. With most developing countries, the degree of specificity in the legal mandates is considerably less than that described in the legal incentives in the USA and other developed countries. Again, this may be related to the inability to pay for the implementation and monitoring of these programmes, rather than as an indication of the level of commitment that a country may have towards protecting and educating its disabled population. Certainly most of these countries have demonstrated good faith in their initial attempts to provide an education for these students and to increase the meaningfulness of their lives.

According to Jonsson (1992), most developing nations have followed a similar course in the development of special education for their students. Historically these countries began with a base of special schools that were devoted to one or two classifications of disabilities (usually blind and deaf), which have eventually been expanded to include for the provision of other disabilities (most frequently mental retardation). Legal mandates to provide this education seem to come from the influence of foreign nations and their policies, as well as from international organizations such as UNESCO. These established services are currently not enough to meet the needs of the actual numbers of students with disabilities, and whatever services are provided tend to be separate and parallel. The degree to which a country recognizes certain classifications also seems to be correlated with their capacity to pay for the servicing of these students. An example can be found in the recent modification in the regulations in the USA to include students diagnosed as having 'attention

deficit disorder' as possessing a classifiable disability which warrants special education. In most developing nations, there are only three or four groups of classifications (usually deaf, blind, mentally retarded, and physically handicapped). Students with attention deficit disorders exist in all countries, but developing nations, because of their limited resources, are able only to begin to address the needs of the most severely disabled.

5. Summary and recommendations

The application of the incentive approach to the system of special education provides a useful model for examining how programme effectiveness is enhanced by the existence of established incentives. Within this area of education, most incentives exist in the form of legislative mandates that have been regulated to varying degrees, dependent on national policy. Another primary form of incentive comes in the funding that is made available in an effort to ensure the implementation of these laws. Again, the commitment and/or ability to pay varies by country and the level of resources available for this priority.

The existence of national legislation reflects a macro-educational approach to managing a comprehensive system of special education service delivery. The discussion presented in this chapter highlights the limited utility of such an approach when it is regulated and enforced to the degree that it is in countries such as the USA. There are many examples that illustrate how such a high degree of regulation often acts as a disincentive towards the achievement of the stated goal of student learning. Although intervention at a national level proved necessary in establishing and protecting the rights of the disabled to an education, the current level of federal involvement has outgrown its usefulness. The level of individualization and specificity involved in educating disabled children requires more of a micro-educational approach that has the inherent potential to be more responsive to local needs and priorities. While there is an inherent tension that exists between this movement of control from the top down, such a shift is critical if this education sub-system is to become more efficient.

This recommendation of a micro-educational approach to implementing special education does not preclude the necessity of national-level involvement. This level of involvement would be more effective, however, if it were focused on the establishment of national goals and priorities regarding the education of all its children and the setting of concomitant standards for this education. If goals are set at the national level regarding who should benefit from special education and to what degree, local districts can work towards supporting that goal without having to make these difficult and politically charged decisions. The federal government should also be involved in establishing funding rates for states and, indirectly, local municipalities, which will allow for the equitable provision of services, preventive as well as remediative, to

all disabled students. Local education agencies, with their knowledge and understanding of local need and ability to implement these national policies can do so most efficiently with the allotted financial resources. The issue of assigning a monetary amount to generally non-quantifiable effects, such as servicing disabled students, is very difficult (Windham, 1990). These effects are highly subjective and thus open to debate. Windham asserts, however, that utilizing monetary, or at least quantifiable, equivalents whenever possible promotes greater objectivity in decision making concerning instructional development. Such a process will become necessary as the cost of educating all disabled students continues to escalate. Difficult decisions regarding who has the most potential to benefit can help in the establishment of educational priorities and the subsequent allocation of resources.

This establishment of national goals for education should represent an integrated approach (Kemmerer, 1990) in which incentives are viewed as part of a larger resource allocation issue. It is questionable whether the disabled student population has ever been adequately incorporated into any efforts to establish national priorities or in the setting of systemic goals. In fact, there are several competing goals represented in the mandates surrounding special education in the USA as it currently exists. It is felt that there should be an increased consistency between the legislative and regulatory incentives that exist within the sub-system of special education and the ultimate goal of increased student achievement. It will be important to examine these contradictions closely and to remove the inconsistencies whenever possible, so that student learning might be more effectively addressed.

These incentives should be mutually reinforcing (Fuhrman, O'Day, 1996) as they interact with each other as well as other policy initiatives on multiple levels. In order for the system to be effective, as a system, in achieving its goal of student learning, these incentives are dependent on the appropriateness and effectiveness of each as individual incentives as well as on how they interact with each other. If there is more micro-educational management of special education, where there is now only a nationally constrained choice, there will also be an increased opportunity to legitimately require increased levels of accountability. This accountability can be used as feedback to increase the system's effectiveness in the achievement of student learning. To accomplish this there would have to be less rigidity in the federal funding stipulations and more flexibility to apply this funding as determined by local need. At this point there is little focus in special education on the issue of student achievement and quality of programming. Instead, the primary concern, at least in the USA, has been on enforcing regulations that frequently have little relationship to student achievement. A great deal of resources are ineffectively applied within this sub-system, partially out of the desire to protect and ensure the provision of an education.

It is critical that there be an increased focus on the quality of this education and the issue of applying standards to this sub-system, if the

goal of increased student learning for disabled students is ever to be realized. With careful planning and an understanding of how mandates interact with the motivation and ability to implement these, the incentive structure in any country can greatly enhance a nation's ability to accomplish this laudable goal.

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Chapter 9

Creating an environment for informed individual choice: the role of central authorities

Daniel Teodorescu

1. Introduction

The Central and Eastern European (CEE) countries represent a valuable laboratory for the examination of the necessary balance between individual and collective choice and the role of incentives in promoting a new division of responsibility. While many recent restructuring efforts throughout the CEE countries have transferred part of the previous authority to educational institutions, to date none of their efforts have improved, in any appreciable manner, the decision-making power existing at the lowest level – that is, the level of students and their families. In the newly decentralized educational planning structures, individual decision-making processes continue to be neglected or understudied. As a result, educational authorities often fail to see the usefulness of establishing a link between individual choices and macro-educational policies, a failure which can lead to unsuccessful implementation.

An incentive-based planning approach would differ significantly from much of the contemporary decentralization and restructuring reforms. Taking the individuals' decision-making capacity as a prerequisite condition, and planning designed to guide users through incentives, is what distinguishes the reforms to be recommended here from earlier ones. Also, while previous structural reforms have made schools more accountable (in exchange for greater autonomy), the proposed planning approach would place greater responsibility for educational decisions not only with school administrators, but with the students and their families. While the CEE countries are used as examples, the conditions described here are generic to a broad category of countries across the world.

As with other evolving markets in the CEE countries, educational markets have recently witnessed an increasingly diversified supply of services, offering consumers an expanded range of choices. At the elementary and secondary level, parents now choose among public and secular or religious schools; schools which emphasize a particular subject (e.g. mathematics), teach in a specific language (e.g. English), or use a distinctive methodology (e.g. Montessori). Prospective higher education

students may apply to several institutions at the same time and, once admitted, they may select their courses and transfer from one institution to another. Higher education institutions have also acquired an unprecedented level of autonomy. Typically, they control admission standards, the number of places that will be open each year in each department, and curriculum content. Also, more flexible programme structures, such as two- to three-year associate degree programmes and Master's programmes, have been established at many public and private institutions.

The greater choice available to individuals and the structural changes in the education sector, however, have created confusion and misunderstanding among many consumers (parents and students) when making educational decisions. It is becoming clearer that individuals will not benefit fully from the greater choice now present in the newly reformed education systems until planners are able to establish an information-rich decision environment. The need for *informed* individual choice is essential if the expected societal and private benefits associated with individual decisions are to be realized. The societal benefits include a better fit between student interests and the academic offerings of educational institutions; improvements in the overall quality of the schools as better informed parents and students avoid academically inferior institutions; and reduced unemployment and over-education as graduates' skills are better matched with the needs of the labour market. The expected private benefits of informed individual choice are a facilitated search process (in educational and occupational choices), a greater probability of securing full-time employment upon graduation, and higher earnings.

The creation of an environment for informed individual choice assumes several significant changes within as well as outside the current CEE education systems. Such changes require a shift in the educational planning paradigm (from manpower planning to incentive-based planning), reformed administrative structures of institutions, and development of management capacity and appropriate legal and financial frameworks. Each of these major reforms is dealt with in turn below. Throughout the chapter, an emphasis is placed on the new states, the former communist nations, which are in the process of making the difficult transition from highly centralized education systems serving command economies to decentralized systems preparing individuals for rapidly evolving market economies.

This chapter begins by presenting the major tasks associated with the design of incentive systems and the roles of central and institutional planners in this process. Next, the new role of the state as an information provider under the incentive-based planning model is discussed. Improving the information flows from educational and labour markets is seen as the most important responsibility of central planners under the new planning model. Third, the chapter discusses the potential inequities that arise in incentive-based planning and suggests ways of attenuating

them. Fourth, the chapter analyses the constraints (infrastructural, cultural, legal, financial, etc.) that need to be overcome in the external environment if an appropriate context for informed individual choice is to be realized. The chapter concludes with some final considerations about the differences between incentive-based systems and other forms of decentralization.

2. Designing an incentive-based planning system

The following discussion assumes a clear distinction among incentives, incentive systems, and incentive-based planning. An *incentive* is something that encourages people to act in certain ways; it may facilitate, reinforce, or reward specific actions (Kemmerer, 1993). An *incentive system* is a collection of rewards and penalties and a set of procedures for directing them to individuals. *Incentive-based planning* is a planning model in which the educational decisions of individuals and institutions are influenced through a system of rewards and sanctions to achieve governmental policy goals. Since the focus of this chapter is on informed individual choice, the incentives discussed are limited to those that influence the individual consumers of education and not those intended to change the behaviours of the institutional producers of education.

The benefits of a shift from manpower educational planning to incentive-based planning can be illustrated by the relatively recent change from mainframe computer systems to mini and personal systems. The new computer architectures shift significant tasks to the users, thus freeing central resources. For instance, users can extract data from a central database and then manipulate it to tailor information to their needs. Similarly, in an incentive system, significant decisional power is transferred from the centre to the individuals, and resources at the centre can then be used for other purposes (e.g. improved educational research). Of course, some of the savings in resources need to be invested in the training of information producers and users, and in the creation of new infrastructures (admissions, transfers, and evaluation offices) in institutions to handle choice. For changes both in computer and choice architectures, the transfer of power can be a lengthy and challenging process, but in the end one that is quite rewarding.

Just as the transition from mainframes to personal computers and client/server architectures required corporations to engage in extensive planning and implementation efforts, so too the replacement of manpower planning systems with incentive-based planning systems requires detailed planning and major implementation initiatives. In designing and implementing incentive systems, planners first examine why certain patterns of behaviours exist and then redirect the educational policy to bring the results more in line with broader governmental goals (Kemmerer, 1990). This process requires a clear definition of the desired

educational goals, objectives, and outcomes; analysis of the current behaviours and their results; identification of the behaviours to be rewarded and the incentives necessary to induce them; establishment of effective information flows; a test of the incentives system on a small educational unit or geographic area; and evaluation of the effects of the new incentive system.

Defining desired planning goals, objectives, and outcomes. An efficient incentive system demands a clear statement of goals (both short-term and long-term) and means, as well as internal consistency between the goals and the means. The goals of most education systems, however, are frequently extremely broad and often reflect political accommodation rather than rational planning (Kemmerer, 1993). In many countries, the frequent change in government makes long-term planning a rare exercise. Often, the difficulty lies not in defining long-term goals, but rather in translating them into action, as each successive government has its own objectives and preferences for means to reach those goals.

These problems are compounded by the fact that governmental objectives are often competitive and, therefore, the pursuit of one objective may result in the creation of incentives that unintentionally act as disincentives to some other objectives. No incentive system can work effectively unless conflicts among objectives are resolved, and priorities ordered. Some of the issues that should be resolved when weighting national educational goals include cost containment versus excellence, quantitative expansion versus qualitative improvement, and efficiency versus equity.

Analysis of existing incentives. Incentives, whether explicit or implicit, intended or unintended, are present in any system (Windham, 1980b). The identification of potentially effective incentives requires a good deal of research, a systems approach being highly recommended at this stage. Such an approach regards the education sector as a set of interacting and interdependent components which together form a fully integrated unit (Pigozzi and Cieutat, 1988). Because incentives introduced in one component often trigger changes in other components, the research must focus on the complex linkages within and among components and on an understanding of how and where incentives in one component can have effects throughout the system. For instance, one way of attracting disadvantaged student populations to higher education may be to create special (lower) admission standards. However, the outcome of this policy might be unsatisfactory (e.g. the failure and early withdrawal of these students), if institutions do not provide the support necessary for the social and academic integration of these students. At the same time, a systems analysis is not complete without a thorough assessment of the broader social and economic context in which the education sector operates. In this case, increasing the access of disadvantaged populations to higher education is not likely to achieve the original policy objective unless the legal framework prevents discrimination in the labour market.

Identifying the behaviours to be rewarded and the incentives necessary to induce them. After clarifying and prioritizing an educational objective, the next task is to identify: (1) the kinds of behaviours that will contribute to the achievement of that objective, and (2) the incentives that will facilitate the desired behaviours. For instance, if an institution's goal is to maintain enrolments at least at the current level, then this can be achieved in part by doing a better job of retaining students (desired behaviour). Assuming that most students who transfer or drop-out leave the institution for reasons related to cost or academic failure, the administration might introduce a set of incentives targeted at those students who may or may not enrol in subsequent semesters (e.g. need-based scholarships and/or academic support services).

All incentive systems should specify a set of rules and procedures to determine which behaviours are to be rewarded and when, how, and by whom they should be rewarded (Kemmerer, 1990; Kemmerer and Thiagarajan, 1989). Planners should be able to identify indicators of performance and to establish the expected values for those indicators in order to achieve their goals (e.g. 85 per cent of the incoming class in Autumn 1995 will be retained in the Autumn of 1996). The success of this step very much depends on what has been achieved in the prior two steps. The clearer the goal, the more specific the system objectives, the easier it is to identify the desired behaviours and appropriate incentives. Likewise, a thorough analysis of the existing incentives is crucial and can often save money and time. It is possible that for a particular intended behaviour, there are already incentives in place which only require minor adjustments, or better information dissemination, to produce the planned outcomes.

The rules and procedures associated with an incentive system must specify the logical relationships among the educational objectives established by the planners, the desired behaviours of individual decision-makers, and the individual incentives (or disincentives). Again, the integration of a specific incentive within the broader incentives system is critical. If a newly designed discrete incentive fails to address the linkages with the larger system, resources that are needed for the success of that incentive but that are not controlled by other sub-sectors or agencies may not be available immediately or may be denied entirely.

A problem that incentive planners encounter at this stage is that they often make assumptions about what participants find rewarding that are not fully shared by decision-makers themselves. For instance, some of the non-monetary incentives which are used in the developed world (such as professional development programmes), might be seen as of little value to teachers in the CEE countries whose salaries are so low that they need second and third jobs to support their families.

Establishing effective multiple information flows. Information flows are the backbone of any incentive system. In an incentive-based planning model, multiple information flows (market to government, government to institution, institution to government, market to institution, government

to individual, individual to government, etc.) are as important as the policy incentives themselves. First, those affected must know the behaviours desired and the rewards and penalties attached to compliance or avoidance. Second, the planner must know whether the incentive is producing the desired behaviour. If the incentive does not work, the planner must discover whether the lack of effectiveness is the result of poor communication, misunderstanding, or the existence of more powerful incentives for other types of behaviour.

The design of multiple information flows poses a special challenge in the former communist countries and in the former or current centralist systems. In these countries, one-way information flows – through which the central planners require specific pieces of information from the field – have been the norm. In order to use an incentive-based planning approach, information flows should be expanded in both directions, that is, from the individual decision-makers to the policy-makers and from the policy-makers back to the individual decision-makers. In these new democracies, educational planners have to get their message across to the consumers and the producers of education in a far more transparent and systematic way than was done in the past. The mass media, regional and local authorities, community and other non-governmental organizations, are all potential information conduits. But this is not the only challenge. Effective information flows need to be built as well between labour markets and government, institutions of higher education and government, institutions and individuals, and labour markets and individuals.

An important consideration for incentive-based planners at this stage is that the design of information flows should anticipate the kind of questions raised by individual decision-makers. For example, many prospective higher education students and their parents are often unsure of the choices they face, unaware of the strategies available to them, unable to specify the data they need, and uncertain where to locate the information needed to address the problems that arise in the choice process. Similarly, at the pre-higher education level, what most parents know about the new private schools is often insufficient to allow them to make an informed choice.

Finally, it is important to keep in mind that the most reliable channels for the transmission of information are the shortest ones. As Windham (1980b) noted, the more distant the planner is from the actual decision point, the less exact and relevant is the information base on which decisions are taken. In a centralized higher education system, this disadvantage works in both directions. On the one hand, central planners are not fully informed about an institution's characteristics and their instructions to subordinates are less clear and relevant the greater the distance they are from them. Historically, these problems – at least in the case of former communist countries – were caused by the lack of incentives to report back up the chain of command. Lower-level administrators had no incentive to report anything but success and

middle-level administrators had no incentive to investigate such positive reports, since they might then have to report failure to top administrators. On the other hand, if the information chain is a long one, parents and students may not receive the information at all or may receive only some part of it.

Piloting the new incentives on a small educational unit. As with any other educational reform effort, local testing and experimentation is appropriate before a newly designed incentive is introduced on a large scale. For example, assume that a country's central planners seek to attract more students into engineering fields, and their incentive is a one-year national scholarship for those who are admitted by an accredited engineering school. Before launching the scholarship programme nationwide, its effectiveness (as measured by the net increase in the number of students attracted to these fields) should be tested first on a few institutions. Unfortunately, laws and regulations often constrain government's ability to engage in policy experimentation in education. However, whenever possible, field testing of new incentives is desirable.

Evaluating the effects of incentives. To ensure effectiveness, policy incentives, like other forms of policy, must be evaluated. After initial evaluation, regular auditing of effects is necessary to determine whether the decisions taken by the educational consumers meet with government expectations and that the responses to the incentives remain those that they desire, since the environment for education changes, incentives and incentive systems may become outdated. If after a certain period of success, incentives no longer produce the desired behaviours, then it is possible that their value has decreased in the eyes of the individual decision-maker. For instance, tuition assistance for engineering students will be less effective (and perhaps, less appropriate) when the market demand for such professionals is not expanding.

Again, addressing the linkages between the effects of discrete incentives and the system as a whole is an important activity. Evaluating the effects of incentives requires attention to the incentives structure to determine that it is adequate, but also to determine that it is functioning in the desired manner and not creating unintended outcomes. Using the last example, if the tuition assistance incentives programme is not periodically evaluated, possible conflicts between governmental incentives and market needs can arise (e.g. too many engineering graduates are produced). Any adjustment to the incentives system should be recommended only on the basis of this evaluation.

Moreover, it is important that planners find out what does not work in the system and use that information to correct the system in a timely manner. Unfortunately, most current educational management information systems (EMIS) were not developed with the purpose of providing the continuous information necessary for system adjustment. As Kemmerer (1993, p.60) asserts, the main rationale of most EMIS is to provide summary information on the condition of the schooling system,

that is, "to indicate whether or not the system worked but not to fix parts that did not".

3. Roles and responsibilities in designing incentive systems: required changes in the educational planning structure

The design and implementation of incentive systems and incentive-based planning requires a relatively decentralized planning structure. The managerial role of the central authorities in such a structure includes: (1) definition of the goals of the system; (2) creation of multiple information flows, and (3) evaluation of the effects of the incentives system. For instance, it is desirable that institutional administrators identify the behaviours to be rewarded and the rewards themselves, since they are in the best position to know students' preferences and needs and to monitor their behaviour. While central planners may also design either direct (affecting students) or indirect (affecting institutions) incentives, the experiences reported by many centralized systems suggest that this might be ineffective, particularly if the education system is a large one.

The key role for central planners is that of establishing mechanisms and routines for the flow of information between government and individual consumers of educational services. Effective information flows determine the success of any incentive system. One of the main assumptions of an incentive-based planning system is that the individual decision-makers perceive and understand them. No incentive, planned or not, can yield the intended outcomes unless it is perceived and understood by the individual decision-maker. As an information provider, the central planner has two main planning levers of action (Windham, 1980b):

- Improving information flows from educational markets to individual decision-makers. This requires providing information about or altering the impact of government-controlled efforts in education (admission criteria, subsidization, prerequisites for graduation, length of degree programmes, and public employment policies).
- Improving information flows from labour markets to individual decision-makers. This means increasing the flow of information to higher education consumers concerning the non-controlled results of education (e.g. wage scales or employment probabilities by programmes of study, degree level, and sector of employment).

Each of these policy levers is discussed below in greater detail.

Improving information flows from educational markets to the individual decision-maker. Education consists of complex sets of services that cannot be easily described in ways that communicate accurately the

qualitative dimensions of the educational experience that a particular student might seek. While it is possible to provide accurate information on institutional aspects such as size, student achievement, physical facilities, religious or political orientation, and curricular offerings, the qualitative aspects of education – such as the school climate, which is often more important to individual students – do not lend themselves to easy characterization. For example, in the United States of America, college catalogues – from the largest universities to the smallest liberal arts colleges – all have common descriptive phrases that include references to "academic excellence, outstanding faculties and facilities, and the concern for the individual student" (Levin, 1991, p.144). This common descriptive language makes it very difficult to assess how well educational institutions follow their missions and how appropriate a particular environment is for a prospective student.

One way in which central planners can assist individual decision-makers is by financing and/or otherwise enabling the dissemination of objective information about institutions and financial aid opportunities. More importantly, they must support not only the dissemination of information, but also the provision of counselling services in schools. The information provided should be understandable to the target population. Unfortunately, as Johnson and Chapman (1979) reported, many of the current written materials used by higher education institutions are not. The information disseminated by the central authorities should address at least the following informational needs: admission policies, academic programmes, cost, career availability, qualification criteria for financial aid, student and faculty profiles. At a more sophisticated level, the state might collect information on campus safety, student services, library capacity and student housing, etc. The college guides published annually in the USA provide a model for those planners in the former communist countries who intend to finance or produce a standardized, detailed report about the system's higher education institutions.

Improving information flows from labour markets to the individual decision-maker. In the past, most labour market information in CEE countries was gathered for the purpose of controlling and directing the economy rather than providing the data for monitoring changing economic conditions. At the same time, because of the ready availability of government jobs, there was limited job counselling or employment services, and no competition among service vendors. The recent shift of responsibility for finding employment to the individual has proved difficult for many individuals, both educated and uneducated. In this context, the provision of information becomes crucial. To exercise choice, students need to know what types of jobs will be available and what kinds of skills will be needed for those jobs. Employers, both public and private, require information about the skills and attributes of job-seekers. And institutions, implementing active labour market policies, need to know the numbers and attributes of graduates at risk of becoming unemployed.

In any market economy, graduates are never informed fully about the potential earnings associated with every potential employer at any given point in time. The problem graduates face is how to gather information on wage rates, the stability of different types of employment, and other determinants of job choice in specific fields, and how to keep this information current. All information becomes obsolete with time; levels of wages change, as do the relative wage rates in different fields. All else being equal, the higher the cost of search, the more modest the search undertaken. While search costs vary by occupation, within local labour markets, the cost of a search is primarily a cost in time, to be valued approximately by the mean wage rate. The search process in other labour markets, however, requires expenditures not only of time but of money (e.g. for transportation, etc.).

In the context of an incentive-based planning system, central authorities can substantially reduce these costs by providing graduates with information about probable salary ranges for different professional fields, geographical areas, and sectors of employment. The private benefits that would accrue from this intervention are evident. When prospective employers of a graduate are readily identified – which is at least partially associated with how specialized a worker is – the search for a job is more cost-effective, that is, the graduate does not have to spend time on irrelevant possibilities. A public investment in improving the information about labour markets also has obvious societal benefits. For example, one of the returns from investment in information is a more efficient allocation of the labour supply. Normally, the role of the state is expected to be greater in providing information for specialized occupations, where anecdotal information is difficult to gather. Also, over time, more qualitative information about job opportunities should replace information restricted to wages and government's role in maintaining information flows should adapt to this change.

Recent trends in graduate employment in CEE labour markets need to be understood, even as they undergo rapid change. Students do adjust to the signals in a relatively free labour market by selecting or changing specializations to meet changes in demand. In this process, however, they are limited by the amount and accuracy of available information and its cost. Much of the current information concerning education and labour markets is casually generated and distributed and is therefore subject to substantial error (Windham, 1980b). Over-educated employees and acute skills shortages in certain industries often result from this over reliance on anecdotal information about labour markets.

Labour market information, including households and employer surveys, should show changes in employment, and anticipate changes in labour demand. Again, it is important that such information is published in forms easily understood by individuals facing career choices and institutions attempting to develop labour investment programmes. Individual students as well as institutions benefit from knowledge about which graduates find jobs, where, and for how much.

More specifically, information should be generated on employment by occupation; the percentage of graduates in public/private sectors; the average time necessary to find employment; and age earnings profiles in the public versus private sectors in different occupational categories. An improved information flow would also require the establishment of employment counselling agencies (including aptitude and interest assessment centres), job search training and related activities for the long-term unemployed. These services have been effective in market economies but are not well developed in the former communist countries (Barr, Gomulka, and Tomes, 1993). In establishing the mechanisms for such information flows, central planners will have to address a number of important questions. These include the following:

- What information and how much information should be generated?
- Is the information conveyed clear and accurate?
- What is the most appropriate form in which this information should be communicated to different target audiences? What kind of media should be used?
- Does information reach the most disadvantaged students?
- Are the information flows cost-effective?

What information and how much information should be generated? Information that is perceived as irrelevant represents wasted time and effort. Therefore, incentive planners should maximize the utility of information to decision-makers. In many countries, more data is collected than is analyzed or used. In much of the developing (as well as developed) world, information-gathering efforts are often duplicative and there is, generally, a lack of co-ordination among data-gathering activities (Chapman, 1990). The lack of technical expertise also causes a very limited interpretation of the masses of data that are being collected.

Apart from the amount of information that should be generated, another important issue is the amount of such information effectively transmitted to the appropriate decision-maker and the degree to which it is used in decision making. Many educational investments appear to be made with little judgement of the future use of educational credentials after graduation. The rewards and sanctions to be instituted in an incentive planning model will presumably improve the consumers' reliance on information in their choice process and, ultimately, improve the convergence of private with public preferences.

Is the information conveyed clear and accurate? An important role of the central authorities in building information flows is to check the accuracy of information coming from both the public and private suppliers of education. The more accurate the information, the more likely it is that individual decisions based on it will be in accordance with public policy preferences and improve the efficiency of the education system as a whole. Needless to say, the consequences of the lack of accuracy of

information about education and labour markets are very serious for the future of any student, as well as for society.

What is the most appropriate form in which this information should be communicated to different target audiences?What kind of media should be used? Ross and Postlethwaite (1988) have pointed out that different types of information on education are required by individuals depending on their level within the education system and their personal capacities and interests. Likewise, in an incentive-based planning environment, information should be presented in different forms to different constituencies. Potential ways of presenting information in a systematic way to the educational consumer include the use of school catalogues, newspapers, mailings, radio and television announcements, neighbourhood meetings, guidance counsellors and, in an increasing number of countries, the Internet. While each of these media can be used in the information dissemination process, the latest expansion of the worldwide Web technology, and its use by universities and government agencies, clearly represents an enormous resource to be tapped by incentive planners.

Does information reach the most disadvantaged students? Both access to information and its efficient use in making choices require experience in choosing among alternatives as well as making rational choices. In both respects, students and their parents in economically and educationally disadvantaged circumstances are handicapped whether facing the choice of a high school curriculum, a college, or a career. To reduce these inequalities, particularly in countries with very diverse student populations, special support services may be needed. The requirements for safeguarding equity are discussed later.

Are the information flows cost-effective? Incentive-based planners must be aware that the worlds of both educational data providers and users are large and extremely diverse. Data collection and information dissemination services are likely to have a high cost. Also, as was discussed earlier, resources are needed for the training of information producers and for the creation of infrastructures in educational institutions to handle choice. However, in the long term, these costs should be offset by a better fit between individual and societal preferences.

4. Safeguarding equity

Under the old manpower planning systems in many CEE countries, entrance procedures at universities evolved within an extensive system of corruption, interventions, and protectionism. Access to higher education was tightly controlled and became an instrument of political pressure on citizens. Potential inequities also exist, although in different forms, in incentive-based planning systems. The increased reliance on individual decision making, whether in the choice of a school, curriculum, or career, however, would reduce certain of the present inefficiencies without

necessarily maintaining equity. Even if a newly created incentives system is perceived as fair by individual decision-makers, that is, the rewards/penalties are similar for equals, individuals are still unequal in accessing and processing information. For the purpose of this chapter, equity concerns the extent to which available information (about educational institutions, programme offerings, and labour market) is accessible regardless of a student's location, socioeconomic status, gender, language, or ethnic group membership.

Incentive planners should take seriously the fact that the ability to make wise educational choices depends heavily upon occupational experience, education, and other resources such as the capacity to obtain and interpret information in a useful way. Families from different socio-economic strata ought to have at least equal ability to exercise choice among all of the available alternatives.

The voucher experiment in the USA provides a good illustration of how an incentive system designed to lower educational inequalities can, in fact, perpetuate them if information about available decisional alternatives does not reach the least disadvantaged groups. In the late 1960s and early 1970s, the USA Office of Economic Opportunity (OEO) initiated a voucher experiment designed to allow families to choose among public schools. The OEO made a considerable effort to provide the community with information about the participating schools through school bulletins, the newspapers, mailings to parents, radio announcements, neighbourhood meetings and information counsellors. Despite this effort, one quarter of the parents over a four-year period were unaware of the availability of choice alternatives (Bridge, 1978). Furthermore, income and education were positively related to awareness of alternatives, and minorities had lower levels of awareness than whites. More than half of the parents were unaware that transportation was free and that they had the right to transfer their child to another school.

It is important to note that even equal access to the decision alternatives does not address all equity concerns; a further problem is raised by the differences in the criteria that parents from different socio-economic backgrounds might use when evaluating the same set of alternatives. Chapman (1979) showed that students from high-income families are more interested in quality than the cost of attendance, when weighting choice criteria. Low-income students are less likely to have college-educated parents, as well as fewer contacts with well-educated role models. Consequently, these students typically have less access to information about higher education institutions. Research in the USA also indicates that high-school students enrolled in vocational and general tracks have fewer sources of information about higher education institutions. Moreover, Miller (1983), in an examination of how higher education institutions use mailing lists to market their programmes, reported that many colleges exclude students who reside in low-income postal code areas. Such practices further exacerbate the lack of information available to low-income students.

Unequal access to information also exists at the pre-college level. Ekstrom (1985) found differences in the number and types of individuals consulted by high-school students with different characteristics. She found that while students in general and vocational tracks are more likely only to talk to friends when selecting courses, the students in the college preparatory track consult not only friends, but also parents and guidance counsellors.

There are some things incentive planners can do to increase the information levels of decision-makers, especially those from socially disadvantaged groups. For instance, efforts can be made to lower the costs of collecting information to individuals or groups. One possibility would be to give low-income and less well-educated individuals more resources to cover the greater costs of their information seeking. These compensatory entitlements then could be used to buy counselling and job training services or other forms of information.

In addition, information can be collected in a standardized form so that irrelevant variations in style are eliminated and comparisons between programmes are easier to make. Currently, in most countries, the information provided by higher education institutions is in the form of advertising and is not standardized across institutions. The state would then have to gather, collate, and disseminate basic descriptive information about alternative suppliers and the potential demand for specific skills.

5. Constraints to introducing incentive-based planning in the current bureaucracies

Decentralization of educational planning and administrative functions by itself does not ensure the basis for informed individual choice. Overcoming constraints outside the education systems is equally important. Potential external constraints to creating an environment for informed individual choice in a given country can be associated with its infrastructure, management capacity, cultural, legal, and financial environments.

Infrastructure constraints. Theoretically, incentive systems presuppose the existence of strong links among various planning levels. In practice, this translates into potentially effective communication systems supported by well-developed telecommunications and publishing industries that permit information to reach, and to be understood by, the individual decision-maker (student, parent, teacher). Many countries, including some of the CEE states, lack such resources.

Management capacity constraints. The current management capacity within many CEE educational institutions is far too inadequate to work effectively within an incentive-based planning environment. The design and implementation of an institutional incentives system normally assumes the availability of detailed information at the school level.

However, many institutional administrators in the region do not even have information on the comparative cost per student in different programmes and levels of the institution. Yet, such cost data are essential for knowing where and how available resources are used, and for manipulating incentives that would change the existing cost structure. Since institutional administrators lack adequate information about their own internal activities, central planners who carry the main responsibility for designing and implementing incentive systems also lack adequate information.

The lack of essential institutional information is compounded by the lack of training and experience with incentive systems, which may be a serious impediment to decentralizing planning authority. The training in incentives analyses of CEE institutional planners -who, over the years, have became very much attached to manpower planning and social rate-of-return techniques – might take some time. Rather than aiming to create a strong planning function at the institutional level – in which institutional administrators are trained to conduct incentives analyses in their schools - it may be more appropriate to conceive this level simply as a producer and distributor of relevant information on which local students and their families could base their educational decisions.

Cultural constraints. Individual decision-makers respond to new incentives, experiences, and programmes from the perspective of their own cultural values and norms. These values and norms determine what people find rewarding, how they relate to educational authorities and government. Cultural differences also affect how individuals view the educational process and its benefits and how they respond to incentives intended to change their behaviours. Decision-makers in two different regions of the same country probably differ in the way they evaluate the risks, consequences, and rewards associated with a set of educational and career options. These differences, in turn, have important consequences for the overall effectiveness of the incentives at the national level, and for the ways implementation should be monitored. Among the cultural constraints, language diversity can be a serious obstacle to an informed decisional process. Therefore, the information flows and incentive structures will have to be constructed to meet the needs of local populations and to describe the specific options in each of the local educational markets of a country. Although this is likely to result in a more expensive data dissemination effort, it may be the most effective way to reach every major group of individual consumers. For instance, historically, the gypsy population – one of the largest minorities in many CEE countries and also one of the most educationally neglected by the communist regimes – has been characterized by low participation rates in secondary and even elementary education. Governments in the region now face the challenge of finding appropriate incentives that will increase this group's participation in schooling. One alternative is to provide incentives to attract more gypsies into the teaching profession.

A more serious cultural impediment to incentive-based planning in the CEE region has to do with the general attitude of institutional administrators with respect to administrative accountability and policy implementation. Under the communist system, when there was little interest in policy outcomes, the main goal of many administrators simply was to carry out orders (Barr, Gomulka, and Tomes, 1993). There was no assessment of whether a certain policy worked or whether it was effectively administered. Since such attitudes (as well as a lack of implementation skills), persist throughout much of the public sector, it follows that many CEE educational administrators will require training in evaluating the effects of the incentives that they put in place.

Labour market constraints. In many CEE countries, the current pay and promotion systems do not provide differential rewards to prospective employees. For instance, an incentive created by a ministry of education to increase subsidies for engineering programmes would not produce more graduates in these fields unless increases occurred in the average salaries of engineers working for state enterprises. A debureaucratization of public employment policies should therefore complement the proactive use of incentives. In the emerging labour markets, individuals make choices about which skills they wish to acquire, and about which jobs they seek. Wage liberalization is crucial in this context, since market-determined wages signal which skills are in greatest demand.

Last, but not least important, is that if workers' skills are to be put to more effective use through improved job information, then labour needs to be more geographically mobile. Effective use of labour also has to include policies to minimize impediments to labour mobility through appropriate labour-market legislation, and through broader policies such as improved operation of the housing market and elimination of administrative controls on an individual's place of residence. Throughout the CEE region, a large-scale movement from industrial towns to major cities (where the new jobs tend to be concentrated) puts a tremendous pressure on the limited housing capacity, which makes individuals more reluctant to leave their current jobs.

Legal environment constraints. The manipulation of incentives by educational planners can be seriously hindered by the rigidities of outdated legislation. Even in well-developed countries, where technological changes and educational innovations, in general, are rapid, changes in legal systems come much slower. However, the gap between what is sought through educational reforms and what the law allows is far larger in the emerging market economies. For instance, controlling a country's structure of higher education enrolments through different levels of tuition by field of study cannot be achieved if the constitution requires free education for all. Also, incentives designed to increase the access of women to higher education in order to promote their employment will not work if the cost of child care, maternity leaves, etc., is borne solely by employers rather than by the taxpayers. Requiring

employers to cover the cost of these types of support provides a significant disincentive to hire women.

Financial environment constraints. Lastly, the adoption of an incentive-based planning approach in the CEE countries will necessitate substantial changes in funding arrangements. The individual decision-maker's responsibility is also enhanced when financial aid packages make a clear distinction between merit-based aid and need-based aid. Similarly, at the institutional level, supply-driven block grants have been the norm until recently. A greater proportion of public funding should be shifted towards demand-driven formulas. The use of such formulas will allow central authorities to better redirect institutional efforts towards achieving the desired social policy outcomes.

6. Final considerations

The importance of information for informed individual choice will vary from country to country and will grow with the complexity and diversity of an education system. The specific decisions that are devolved to lower administrative levels will vary, as will the levels to which the new planning authority is decentralized. Some countries will shift authority to design, implement, and audit incentives systems and distribute information to the institutional and lower levels. Others may find that the state is the most appropriate authority to take both the role of information provider and designer of incentives, and little if any change is needed in the formal role of institutional administrators. Educational incentives, however, will be most effective in those countries where they are created, implemented, and evaluated at the lowest possible administrative level. Institutional administrators know the individual student, and if appropriate autonomy is granted to them, they have stronger rewards and penalties and can also undertake a more systematic evaluation of the results of decisions. At the same time, effective and equitable decentralized systems are only likely to be realized if central planners are willing to provide the necessary fiscal support, information infrastructures, legal frameworks, safeguards for equity, and management training. Decentralization does not decrease the role of central authority, it merely changes it; the issue is one of comparative advantage not ideology.

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Chapter 10

Linking information to incentives

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The conceptual foundations and the practical applications of incentive analysis presented earlier in this volume presuppose the availability and effective dissemination of incentive information. As was noted in Chapter I, the choice between collective and individual decision making depends on the effectiveness with which information can be used:

> *"Which of these systems is likely to be more efficient depends mainly on the question under which of them we can expect that fuller use will be made of existing knowledge. And this, in turn, depends on whether we are more likely to succeed in putting at the disposal of a single central authority all the knowledge which ought to be used but which is initially dispersed among many different individuals, or in conveying to the individuals such additional knowledge as they need in order to enable them to fit their plans with those of others"* (Hayek, 1945, p. 521).

Windham (1979, p.5) extended the discussion of the relationship of information to the choice between collective and individual decision making as follows:

> *"No incentive ..., planned or not, can have an effect unless the individual decision-maker understands it. Thus, ... information flows and policy incentives are seen as the major forces determining planning success".*

This chapter will review five major aspects of the linkage of information to incentives and how this linkage relates to the roles to be played by central versus individual decision-makers. These aspects are: (1) the nature of educational management information systems – EMISs; (2) how information can be used to support improved decision making; (3) the special characteristics of an incentive-based EMIS; (4) the role of

monitoring and evaluation in the incentive/information process; and (5) the effect of decentralization on incentives and information management.

1. The nature of educational management information systems

The design, use, and interpretation of educational incentives can be properly understood only within the context of the management information system of which they are a key component. An EMIS is the set of structures and procedures that govern the collection, processing, analysis, presentation, and use of information within an educational organization or system. The last decade has seen the emergence of the EMIS as a key new development in international concerns about educational administration and planning. Five trends have converged to promote this new priority attached to the EMIS:

- the rapid expansion in the physical size and geographic coverage of education systems;
- the increased complexity of educational activities in terms of their number and the variety of outcomes pursued;
- the heightened pressure for more efficient use of resources (brought on by increased demand and a limited ability to expand available financial support);
- greater accountability requirements; and
- the improved availability of relatively low-cost technologies for dealing with large data sets.

Of these five trends, the issue of accountability may be the most central. Because of the increased size and complexity of the education sector and a recent history of constrained financial support, educational managers have found it necessary to have more and 'better' information upon which to base *and defend* their decisions, including those related to incentives. Because of the greater demands of accountability, more attention is directed to how and why educational decisions are made. Data-based justifications are more likely to be accepted both administratively and politically; it is the responsibility of the EMIS to produce the data, including indicators of educational components, processes, and performance, upon which decisions about educational policies and practices can be based and justified. The importance of EMIS structures and procedures within educational management can be expected to continue to increase into the next century as the political struggle over the financing and management of education escalates in both developed and developing countries.

The operation of a successful EMIS will involve five major steps: (1) needs identification; (2) data collection; (3) data processing and analysis; (4) information provision; and (5) information utilization. Each

of these steps must be designed and implemented properly if an effective EMIS is to be achieved.

Needs identification. There are two predominant means for identifying data needs. The first involves a survey of decision-makers to determine what data they currently use and the additional data they would like to have. The second means of data needs identification involves an analysis of the EMIS conceptual framework (the specification of the key components and relationships) to determine the most critical aspects of the management decision-making process. Neither of these needs identification activities is sufficient by itself. The results of a survey of data users are limited by their experiences and imaginations; there may be types of data that would help their decision making, but because of lack of experience with such data, they may not ask for it. Similarly, a conceptual framework for education may yield many data items that are impractical or outside the control or consideration of the decision-makers the EMIS is to serve. By combining the practical orientation of the survey of users with the broader theoretical perspective provided by the conceptual framework, data needs identification can be conducted in a balanced manner. Once identified, all proposed data for the EMIS, including the educational incentives, must be judged in terms of the criteria of relevance, accuracy, timeliness in collection, understandability for decision-makers, and affordability.

Data collection. The data within an EMIS will originate from one of three main data collection sources. First, day-to-day records of the operation of an education system or organization generate an enormous range of potential data on personnel, clients, and operations. A selected sub-set of this data may be incorporated into the EMIS as proxies for performance indicators; for an educational EMIS this might include attendance data on pupils or expenditure data on personnel, materials, or equipment. Also, additional periodic data may be generated as a part of annual budgets, plans, or evaluations.

Second, a common form of data collection for an EMIS is for a 'census' to be conducted covering all parts of an education system's or organization's structure. Most education systems or institutions conduct an annual data collection on personnel and pupil characteristics, facilities conditions, the availability of educational materials, and other information deemed necessary for education managers. Third, it is becoming increasingly popular to use special data collection exercises to deal with issues of policy or practice for which inadequate information exists from the on-going data collection activities. Often based on sample rather than census structures of data collection, such special purpose data collection activities have the advantage of immediate relevance, greater detail on the given topic, and a reduced lag time between the need for information and its provision.

These internal system data collection activities can be supplemented by incorporating within the EMIS bibliographic, organizational, and research data bases from outside the specific education system. This

'outside' information is critical for defining the context of the system's operation and for facilitating comparisons of organizational performance with other systems or with other aggregate performance standards.

Data processing and analysis. A majority of the simple errors that exist in an EMIS are introduced in the collection process: however, ineffectual data transcription and coding procedures, inadequate verification procedures, and errors in data storage and retrieval systems can compound these problems. Data will rarely be made more accurate after collection but can often be made less accurate; of equal importance, the ability to access and interpret the data can be so constrained by improper processing that a potentially valuable data set can be rendered either unusable or subject to serious misinterpretations.

Data analysis within the EMIS should basically parallel the conceptual framework upon which the EMIS data collection was based; for example, causal linkages posited in the original framework can become the rationale for the interpretation of correlation analysis. Also, if the framework asserts that gender, urban-rural location, age, or other such characteristics are important to educational operations, then the data results may be analyzed in terms of these dimensions to determine if the assumed relationships can be confirmed. The EMIS conceptual framework will also guide the managers of the information system in the construction of indices or other derived indicators of performance that combine two or more pieces of individual data.

Computer-based systems and the dedicated software packages for statistical analysis of large data sets greatly facilitate an interactive approach to data analysis. One can now move easily from simple frequency distributions of variables to a complex path analysis of relationships and to a great variety of statistical operations related to specific data attributes.

An inadequately appreciated aspect within certain EMISs is the need for standardization of procedures and measures over time. Standardization of procedures (e.g. common coding systems for data input and use of a similarly designed data analysis process) reduces the training costs involved in each new cycle of data processing and analysis and will constrain one major source of data errors. Using the same data measures over time will promote comparability among data for different time periods and also encourage understanding of the data output by the data users. Changes in an EMIS are often necessary but the benefits of these changes should be obtained while minimizing the costs, the constrained comparability, or the reduced understandability of the indicators.

Information provision. Most EMIS professionals have been quick to appreciate their responsibility for identifying needs, promoting effective collection procedures, and monitoring the processing and analysis of data. There has been a less universal recognition of the need to provide data in a manner appropriate to the users – that is, appropriate to their capacities and responsibilities. An example would be the differences in terms of personal capacity and responsibilities that might

exist between three possible users of an educational EMIS: system planners, institutional administrators, and policy-makers.

System planners are likely to have great facility with data and their responsibilities require them to make use of the available data in their planning design and justification. For these individuals, the EMIS professionals may often need do little more than provide access to the EMIS indicator data. Institutional administrators may, because of accountability requirements, have a high perceived need for indicator data, but will often not have highly developed data utilization skills. The administrators may be able to articulate their needs for information, but the EMIS professionals will have to select, process, analyze, *and* help interpret the data in order to assist the administrators in fulfilling their responsibilities.

In contrast, policy-makers, especially those in a political or senior administrative position, may be quite far removed from the realities of daily organizational operations within education systems. For these individuals, the EMIS professionals will need to encourage EMIS use by convincing the policy-makers of the relevance of educational indicators to their responsibilities, and by structuring the data presentation in such a way that it is readily comprehensible. Finally, for individuals, EMIS components will have to be matched to their specific characteristics and decision-making needs. The general rule for provision of EMIS results is that the information provided must meet a recognized need of the potential users and be understandable to the users within an 'interpretive context' (involving decision-makers' goal priorities, organizational responsibilities, and their understanding and acceptance of the EMIS' conceptual framework) with which the users are familiar. As to the last, an incentive-based analysis of an educational issue cannot be useful to a decision-maker who either does not understand or who rejects the incentive approach. The data users' interpretive context is a key determinant of what information will actually be valued and used.

Information utilization. There are three alternative examples of information use that may result from operation of an EMIS incorporating educational indicators. First, the information provided may be extensively used to evaluate existing policies and practices and to compare alternatives for future implementation. This 'ideal' form of use is often given as the sole or main benefit of EMIS operations. Second, the information may be selectively applied to support those policies or practices that have already been determined bureaucratically or politically. In this second case, the EMIS is not a decision-making base but a decision-justification base; in such a context the EMIS results may be ignored if they differ from accepted policies or practices.

Third, an extreme case of decision-maker indifference would be where the EMIS is created and operationalized, but the results ignored, regardless of the data's support or contradiction of approved activities. However, even in this situation, there may be some long-term benefits derived from the EMIS if the indicator data and their analyses and

interpretation affect individual perceptions at the technical or lower administrative levels of the organization. However, in individual decision making, the failure to use data often originates with the individual's lack of knowledge that data appropriate to his/her decision making is even available. If EMIS data is to play a stronger role in incentive-based planning, data managers must become more active in 'marketing' their data to this potential population of users.

In most situations, under-utilization of EMIS results should force the reconsideration of the EMIS structure and a determination of whether a revised system – larger or smaller, but certainly one linked closer to information needs – should be instituted. Unfortunately, unless proper remedial steps are taken, the inertia inherent in some bureaucratic structures can lead to the EMIS continuing to collect, process, and disseminate indicator information without any evidence of the EMIS output being applied to an effective purpose.

2. Promoting educational information use for improved decision making

This discussion of EMIS structures and their use is a necessary preface to the discussion of incentives information because it is only within an effective EMIS that educational incentives can have the desired impact on educational policies and practices. The issues discussed here – needs identification (with participation by key users), data collection methods, the operations of data processing and analysis, information provision, and information use – will be key ones in the design and development of any incentive-based indicators system. The goal of the incentives/information framework is not simply to identify and develop measures of educational components, processes, or performance; the goal must be to encourage the *proper use* of these indicators to improve decisions made at all levels about the educational opportunities for children, youths, and adults. This goal can be achieved only if the development of educational incentives is seen as a *component* of a larger EMIS development strategy. Such a strategy must consider issues of organizational contexts, hardware and software technologies, and training needs. Information use will be the single greatest barrier to effective operation of such an EMIS. The technical problems of needs specification, data collection, processing, and analysis, and even of information presentation, can, with training and appropriate support, be overcome in most countries. In contrast, the human and organizational barriers to proper information use in incentive-based decision making may prove much more difficult. The long-term human barriers to effective use of an information system are the lack of training, skills, and adaptive capacity of potential EMIS users; the ability of the EMIS to adjust to these characteristics will determine the ultimate application of EMIS results. In addition, organizational barriers exist in a resistance to

changing roles (a greater importance for the information offices and to those personnel familiar with the new information-processing technologies) and a reluctance to forego traditional, non-data-based justifications for decisions. These human and organizational constraints on the potential usefulness of the incentive-based EMIS must be anticipated and adapted to as part of any successful implementation strategy.

In any context, but dramatically so in education, the quality of decision making is determined by the availability and use of appropriate data for decision-makers. If the benefits of an EMIS are to be obtained for education systems, institutions, and individuals, a greater emphasis must be placed on the informational context: the political and organizational environment and the skills and attitudes of the decision-makers. These are the factors that will ultimately determine the contribution of any attempt to promote more equitable and efficient learning opportunities through the provision of more and better information.

Chapman and Mählck (1993) noted that with regard to the education sector assessment literature, there has been found a lack of timely, accurate, and comprehensive information on such basic educational data as enrolments, number of teachers and schools, and the availability of instructional materials, and this has been a major constraint in many developing nations on the ability to plan school reforms. Even in developed nations, these data – which may be more commonly available – are often over-aggregated, underutilized, or both. The fact is that in too many nations, the collection and maintenance of educational 'data' has become separated from the requirements by educational decision-makers for educational 'information'. Numbers and statistics exist, but they are often not in the form required or are not available to those who would best be able to use them.

Chapman (1990) identifies four ways in which a properly constructed EMIS might be used to improve decision making in education: (1) providing data that is used to secure or to allocate resources; (2) supporting arguments against inappropriate decisions; (3) identifying inefficiencies; and (4) supporting mechanisms that can offset the effects of resource losses. However, these desirable benefits of an EMIS will require appropriate and timely data, relevance of the data to the priority decision issues; and a decision-maker who has access to the information of the EMIS *and* the training and skill to use it. In too many individual and organizational decision contexts few, if any, of these preconditions for effective use of the EMIS exist.

It is all too easy to expand data acquisition and all too difficult to improve data utilization. The same computer and communication data that make data collection easier, may or may not help improve the conversion of the available data into a foundation for improved decision making.

A legitimate question to be asked is whether the incentives- based EMIS is adaptable to the needs of individual decision making or is only of use for macro-educational managers.

Ten years ago the answer might have been that the nature of required aggregation in data was such that little micro-educational applicability might exist. Now, because of the availability of low-cost information processing technology, information can be made available to individual decision-makers promptly and in great detail. However, the existence of this capacity to assist individual decision-makers has not been matched by a parallel increase in actual activities to support individual decision making.

3. The characteristics of an incentive-based EMIS

Individuals need two basic forms of information. First, they need to know the formal government mandates, rewards, and penalties for the alternative educational choices they face. Second, they need to know the probabilities of success and failure that are attached to these choices given their special characteristics and the context within which their choices must be made. These two types of information can be designed within an EMIS structure and then delivered to individuals on a request basis *if* government wishes to engage in this form of individual decision-making support.

An example of the information on mandates has to do with the laws governing mandatory attendance, treatment of minorities or handicapped students, and public financing criteria (including funding formulas). This information tells the individual what behaviours or characteristics will be rewarded and indicates what are the basic expectations of government. However, most central authority mandates exist less as incentives for individuals and more as incentives for subordinate forms of government and for the institutions that deliver education to the individual.

The second form of information, specific details on programme alternatives and probabilities, is often available only if the individual consumer seeks it out and, sometimes, not even then. For example, parents who wish to know about the curricular differences between their local school and a nearby alternative (public or private) will find that they must depend as much on gossip and rumour about these differences as they will on any objective data base. Most schools will not be able to tell parents the probability of their child succeeding in a particular programme or of the later success of individuals like the child who moves on to further education after completing such a course of study. The exception to this will be certain private institutions that will provide such information as part of their marketing activities.

The implication, once again, is that the market responds only to those who can afford to acquire and act on its information. The public school 'monopoly' that characterizes education in most countries survives

not because there are no alternatives (although there are cases where this is true) but because the ability to access and use information is available only to a small minority of the population.

Government now has three roles to play in the incentives information system. First, it must continue to articulate, monitor, and enforce those global mandates that express the central authority's expectations of basic educational rights and the conditions under which they will be delivered. Second, government will continue to create fiscal and other incentives to encourage (but not require) local authorities and institutions (and, in some cases, individuals) to perform certain tasks and to behave in certain ways. Third, government should greatly expand its role in providing information about educational alternatives and their costs and probable effects.

These three information roles of government can be distinguished as providing *mandatory*, *stimulative*, and *facilitative* incentives. In the first case, the incentives provide a minimum of leeway for local or individual interpretation or adaptation. In the second, the incentives are designed to push behaviour in a certain direction, but not to enforce strict and uniform compliance. And in the third case, the government is providing information to allow individual decision-makers below the central authority level to make the best possible decisions they can.

It is important to remember that the interpretation of educational incentives is inherently subjective. Often, an EMIS may be presented as incorporating 'objective' or 'value-neutral' measures of educational performance, but this simply cannot be the case. The specific context used by an individual to interpret the incentives may be implicit, but it always originates in some value judgement about the desired effects of education.

Also, it is important to remember that, as a social activity, education is more complex and difficult to summarize than are activities in such other social policy areas as health or nutrition. While a researcher or policy-maker may be relatively certain of the effects of a successful vaccination or feeding programme, the provision of incentives for a care-givers training course, of a broadcast series to encourage a change in social attitudes and behaviours, or of a year of 'schooling', offer no similar assurance of the effects on individual human development. Also, education incentives must be long term and recurrent – this greatly increases the cost of monitoring and evaluation, while reducing the certainty of any one-time evaluation results. Given this complexity, any incentive-based information activity must answer the following five questions:

- What forms of education will be included?
- What parts of the educational production system (inputs – processes – effects) will be emphasized?
- Which specific indicators of education will be selected, defined, and operationalized?
- How will data collection take place?

- What programmes will be instituted to encourage proper use of the indicators data?

Incentive information should be selected to provide at least one of the following: (1) a description of the political, social, and economic environment in which education takes place; (2) information that describes the major inputs into the education system in terms of quantity, quality, and cost; (3) information on how inputs are combined into educational processes to produce outputs and outcomes; and (4) information on how the outputs and outcomes relate to the stated goals of education and the needs of society. The information must be presented in a format that is accessible by the individual decision-maker. At the institution or programme level, the incentives information must promote improved decision making by both the staff and the clients of the educational activity. At the country and decentralized levels the information should be of use either for reformulating public policy about education or for the evaluation of administrative policy about direct educational practices.

An objective of any incentive-based EMIS effort is to increase the interpretive context for decision-makers so that more valid analysis can be carried out. The contribution of incentives analysis to macro-educational policy analysis or individual decision making is to improve the basis for individual choices, not to remove the need for these choices. The 'right' answer may not be obvious, but an accurate estimate of the probable costs and benefits of alternative choices should be.

The interpretive context of an incentive-based EMIS, as noted above, should be derived from the goals of the educational activity and the experience and responsibilities of the decision-makers who use the information. One of the most dramatic characteristics of education is that it has multiple goals and these goals are not the same for all educational activities and are valued differently by various groups in society.

The benefits normally sought from education are learning achievement, equity in access and progress, efficient use of resources, cost containment within budgetary allocations, and promotion of positive psychological and social attitudes of participants. As goals, these benefits are often seen as competing with one another, at least at the extreme. The value of an interpretive context for the EMIS is that it helps establish priorities among goals and allows an understanding of the trade-offs that may be made among goals in defining some composite set of measures for monitoring educational 'success'. If the goals for the incentives are clear, so will be the criteria for monitoring their accomplishment.

A major public policy controversy has centred on whether inputs, process, output, or outcome indicators should be used in the assessment of educational effectiveness. However, the focus on the effective educational institution (an aggregate or collective concept) has encouraged an under-emphasis on the need for effective learning (an individual or sub-group concept). If there is ever to be a meaningful

standard of educational effectiveness, it must incorporate a broad set of indicators and be designed and assessed in terms of individual pupil performance (with aggregation for significant sub-groups – e.g. gender, income or social class, location, ethnicity, and citizenship status). If the definition of educational effectiveness indicators is to be politically acceptable, it must explicitly incorporate some output standard and an equity dimension. The social function of education must include the production of 'completers' possessing certain desired characteristics. The difficulty at this level – and it is a difficulty that exists in wealthy and poor countries and in both those that are culturally homogenous and those that are culturally diverse – is that the desired characteristics for the completers are multiple and can be mutually exclusive.

The characteristics are multiple in that they include both cognitive and non-cognitive traits and, within these two categories, are manifested by multiple individual dimensions. Thus, society must concern itself not just with cognition versus attitudes, but with the relative emphasis among such areas as mathematical skills and written expression or political versus aesthetic attitudes. The desired characteristics are also potentially mutually exclusive in that, given efficient allocation of all currently available resources, increasing the incidence of one educational effect may require a reduction in another. Incentives to promote learning goals are complex even for a single student, when aggregated to the national population of students, the design of the incentives, and the accompanying EMIS data, will not be a simple task.

The proper management of public policy and of educational institutions is facilitated by the establishment of goals that are simple, specific, and few in number. Such goals allow the public and institutional managers responsible for education to develop an understanding of the causality of school effects – i.e. what inputs and processes result in what effects and *for whom*. Unfortunately, the nature of the political process in most countries operates against this desirable situation for education management; over the last quarter century the goals for education have become more complex, less specific, and exist in larger numbers than ever before.

In summary, any context for an incentive-based EMIS should have the following characteristics:

- it must incorporate output measures as a primary but not exclusive form of effectiveness indicators;
- it must be based upon the current state of understanding of the linkages of inputs and processes to learning effects;
- the effectiveness standards used must be sufficiently quantitative to allow indication of the direction and scale of improvements or declines;
- the indicators used should be sufficiently qualitative in their generation to avoid the current legitimate scepticism toward

the use of inappropriate statistical artifices to reflect complex realities;

- the indicators must view the full range of results, not simply means, medians, or quartiles; and
- the standards must be operationable and understandable so that appropriate management steps can be taken when the performance of the school fails to meet the society's requirements.

No information planning methodology can be meaningful unless one is willing to forego the idea that education, even within one nation, exists as a monolithic structure. The diversity of locations, quantity and quality of inputs, student and community characteristics, materials, curricula, teaching technologies, and facilities means that, to paraphrase the anthropologist, one never steps into the same classroom twice.

Given this condition, when one speaks of 'education', one must first define the particular set of institutions and individuals one means to include. Unlike the individual parent or student decision maker, the educational planner or policy-maker will need to abstract away from certain differences and treat a group of educational contexts as if they represent a 'class' with relatively internal homogeneous characteristics. But, when this is done, these professionals must recognize that the abstraction is not the reality and that the larger the 'class' of contexts, the greater the divergence between reality and the abstraction that has been created. The 'average primary school', the 'normal vocational school student', and the 'typical university programme' all represent abstractions that have meaning only to the extent that the internal variations in these categorizations are small or irrelevant for the planning or policy considerations.

These traditions of aggregation in decision making can be traced to the macro-educational planning methodologies which required the assumption of internal homogeneity. The more distant is the planner from the events he or she is attempting to govern, the greater will be the need for informational artifices. These collective classes allow the planner to make decisions based on information about the majority – or perhaps the plurality – characteristics of the group. Even if distributional data (such measures as range or standard deviations, for example) are considered, the result is only to reduce, not eliminate, the poor fit that results from a common planning or policy response to a complex educational reality.

An incentive-based information system must respond to this issue of information abstraction as well as to the above-stated need to provide mandatory, stimulative, and facilitative information for decision-makers at lower levels. With mandatory incentives, there is little if any issue with informational abstraction because most mandates are designed to have the same effects regardless of differences in the educational contexts. However, in actual practice, even a mandate such as compulsory

attendance may incorporate certain exceptions for home schooling alternatives or for ill or disabled pupils.

Stimulative incentives, such as supplemental funding if a certain action is taken or removal of funding if it is not taken, explicitly address the differences in educational contexts. Facilitative incentives accept the differences that exist, but assess a penalty for those contexts who wish to maintain differences with which the central authority does not agree. For example, schools may receive additional funds if they participate in a national testing programme or a university may lose funds if it does not institute certain safety procedures in its laboratories. The individual institutions may feel these actions are unnecessary, but if they ignore the incentive, they must be prepared to pay a price. An implication of this is that non-compliance becomes an income-elastic preference; one does not need to comply as long as one can forego the subsidy or pay the penalties inherent in enforcement of the incentive. The less financially independent the institution or individual one is attempting to influence, the greater the effect the stimulative incentives will have. Issues of monitoring and enforcement, in fact, are most critical for stimulative incentives because their ability to encourage desired behavioural changes is directly related to whether new funds will be lost or penalties assessed for non-compliance.

The facilitative incentives are the most sensitive to the differences that exist among actual educational contexts and the information available about them. These subsidies do not encourage one choice or another, they simply attempt to create an opportunity for the individual or institution to be able to make its own choices effectively. Information is the most common form of facilitative subsidy (transportation subsidies are probably the next most common). As has been discussed above, a major constraint on institutional and individual decision making is the lack of timely, accurate, and comprehensive information. Without such information, there is a tendency to defer to some centralized authority as knowing 'what is best'. What is missing is the realization that the information deficit for the central authority may be at least as great as for the individual or institution and the central authority operates under a special handicap of not having a detailed understanding of the specific context.

The incentive-based information system must fulfil this third function of providing information to facilitate individual and institutional decision making. Also, better information should be provided on both mandatory expectations and stimulative requirements and responses to allow individuals and institutions to understand their responsibilities and their options more completely. Finally, monitoring and enforcement are a central activity of the incentive-based information system. Without these activities the central authority cannot exercise its responsibilities and the individuals and institutions to be affected by the incentives will not respond consistently and appropriately.

In summary, the distinguishing characteristic of an incentive-based information system is its ability to respond to a variety of complex and individualized educational realities. It will provide the central authorities with the aggregate data they require for their creation of policy incentives, and will allow for the dissemination of information to individuals and institutions (and to local authorities, where appropriate) about the system's stimulative and facilitative incentives. This last form of incentive, including information on educational opportunities and probabilities, will become a more important part of the incentive-base information system over time if planners and policy-makers come to appreciate the wisdom of exploiting the informational advantages and decision-making skills of those other than themselves. In the section that follows, more detail will be provided on the monitoring and evaluation activities that characterize the operation of an incentive-based information system. Succeeding that, attention will be directed to the relationship of such an information structure to greater decentralization and individualization of educational responsibility.

4. The role of monitoring and evaluation in the incentive/information process

Windham and Chapman (1990) have created an efficiency-oriented structure for evaluation of educational activities that is directly applicable to the role of monitoring and evaluation in an incentive-based education system. 'Monitoring' involves the tracking of events over time; the term and its use are value-neutral in that the purpose of monitoring is to keep a record of how something changes, but not to imply anything about these changes being favourable or unfavourable. Windham's (1988) set of baseline indicators of educational efficiency are an example of a monitoring framework. One measures these indicators as one initiates the information system (although one can, if data are available, project the baseline data backwards in time) and then recurrently assesses them to see if and how they have changed.

Monitoring has no value outside an evaluative structure. 'Evaluation' involves a judgement of worth. The evaluator makes judgements both about which indicators are important and about the direction and extent of changes in these indicators. Evaluation differs from research in that the latter seeks to discover how and why a relationship exists, and the former seeks to make a judgement of whether the result justifies the costs. Research seeks the generic conclusion, while the evaluation process is specific to the immediate events. These characteristics of specificity and immediacy make the evaluation process quite complementary to the needs of an incentive-based information system.

Kelly (1985) also stresses that evaluation is a practical activity leading to action, not just new knowledge. The evaluator values new

knowledge, of course, but values it rather as a facilitator for action more than as an end in itself. Again, since incentives are meant to promote actions (specifically, behavioural change) the incentive process is closely linked to evaluative actions.

The three common forms of evaluation are context, formative, and summative. Each of these will be used within the incentive/information system. Context evaluation focuses on the opportunities and constraints of the educational environment. The context may be either macro- or micro-educational, but the latter is less common under the traditional central planning methodologies. Still, such evaluations can benefit micro-educational decision-makers by sensitizing them to the overall incentive structure (planned and otherwise) within which education must operate. For example, an understanding of aggregate teacher shortages, labour market imperfections, or fiscal limitations may be useful in setting the framework for micro-educational decisions of an individual or an institution.

Formative evaluations of educational activities are of great potential value because they alert all decision-makers to potential problems and emerging strengths of these activities. The point of formative evaluations is to allow intermediate decisions about continuance, improvement, or remediation of an educational activity. For example, if gender-equal access to education has been mandated, an evaluation may show that female participation rates are highest where the female teaching population is highest. This finding can lead to an expansion of teacher training opportunities for females (to create better matches of student and teacher gender), the provision of information to parents about schools with female teachers in their areas, and a social information programme to encourage parents to overcome gender-biased attitudes. Formative evaluations recognize that education is an ongoing activity that requires recurrent maintenance.

Some may question whether summative analysis plays much of a role in education. Other than certain project initiatives, few events in education ever have a clear termination point at which one can stop and assess success or failure. The distinction between formative and summative analysis may be more one of degree, but there is an important distinction. In a summative analysis, further remediation of problems is not an alternative; one must accept or reject the activity. In reality, an innovative project (for example, in distance education or peer instruction) will rarely come to an 'all-or-nothing' conclusion. Rather, a decision may be made to continue the programme *with certain changes* or to discontinue it, but to *retain certain aspects*. For the purposes of incentive usage, all educational evaluations may be considered formative and be assessed by the extent to which they allow decision-makers, macro- or micro-educational, to make improved judgements.

A special aspect of monitoring and evaluation in the incentive-based evaluation system is the assessment of compliance with incentives by central authorities. An expanded role in data management for education

would be given to the collection and analysis of compliance data. A less obvious outcome should be greater analysis of how individuals acquire and use incentive information for their decision making.

In the concluding section of this chapter, the effect of decentralization on the incentives information system will be reviewed.

5. The effect of decentralization on incentives and information management

The past decade has seen a tremendous increase in the promotion and introduction of the EMIS around the world. The bureaucratic need for greater information about increasingly diverse systems of education and the political advantage (heightened by the spread of democratic, or at least representative, government) of data-based argument have heightened the attention given to both educational data collection and to its uses (for example, see Ross and Mählck, 1990).

During this time few ideas have been more heralded in theory – and more ignored in practice – than the concept of decentralization of the EMIS. In this characteristic, EMIS development represents a microcosm of the larger decentralization issues with which education has been faced in recent years. There has been an increasing recognition that both the equity and efficiency of education systems may require a more decentralized structure. This need is partly a result of the normal administrative diseconomies of scale (the higher unit costs associated with operation of larger organizations) which arise in attempting to deliver comparable quality within a system with increasingly diverse forms of education and training, and with increasingly varied needs on the part of its clientele.

Windham (1980) has pointed out that:

> "*One must study the complexity of education as it exists, while simultaneously developing a theoretical model of educational processes based upon the response of individuals to perceived incentives and information.... Centrist planners, no matter how much discretionary power they have, never determine the actual outcomes of policy. They can only set in action forces which they anticipate will have certain effects. The effects themselves are the results of the millions of micro-decisions made by individuals*"...

Ross and Postlethwaite (1989) have echoed this micro-educational view by encouraging planners to recognize that different information on education will be required by different individuals, depending upon their level within the education system and their personal capacities and interests (see Somerset and Ekholm, 1990, for a related view). The challenge of the next decade will be how to encourage decentralized data

use both for its technical planning advantage and because of its ability to democratize the planning process.

One of the major justifications for decentralization of data use is to narrow the diversity within the groups for whom educational decisions and plans must be made. In this manner it is assumed greater agreement may be reached as to both objective data and decision criteria and the subjective resolution of disagreements can be attained at lower cost. Two difficulties exist with this assumption. First, do the decentralized micro-educational units differ dramatically from the macro-educational one in terms of the disparity of characteristics?

The second problem is that reducing the cost of decision making through decentralization may result in a perception of reduced collective (social) benefits. Thus, the aggregate support for education may be reduced as educational variation is increased among the decentralized units. The implication of this is that one may have to anticipate decentralization of financial responsibility as a concomitant or subsequent step to decentralization of authority. Given variations in available resources, some regions may pay a high resource price by gaining an 'autonomy' that cannot be implemented for lack of funds.

In summary, the issue of decentralizing educational data use is part of two larger social issues: the proper construct of the educational planning process and the justification for decentralization of educational authority. Only when agreement has been reached about the balance between rational and interactive planning approaches and about the proper location for educational authority, can the debate over decentralization of data use really be engaged (for more on these issues, see Chapman and Boothroyd, 1988, and Chapman, 1990).

This discussion of the context for and means of promoting decentralized data use has attempted to make several key points:

- the administrative issues surrounding decentralized data are part of the larger political, social, and economic issues determining the decentralization of educational authority;
- the planning model (including both 'rational' and 'interactive' components) used by a country will condition the attitudes towards decentralization;
- decentralized data use is a means towards improved educational decision making, not an end in itself;
- the test for decentralization is not where decisions are made, but to whom the decision-maker is accountable;
- the major decision-making benefits to decentralization are reducing the degree of data abstraction, permitting a reduced response time, and clarifying the lines of accountability;
- the major barriers to decentralization are the lack of a political/administrative will to change, inappropriately trained personnel, and inadequate access to the prerequisite technology and communication infrastructure;

- as strong as these barriers are, the forces of political and bureaucratic evolution will encourage all systems to move towards greater decentralization of authority and increased localization of accountability;
- the five strategies for promoting local data use must be adapted to the specific decision-making context of each country; and
- for the full value of local data use to be realized, it should take place within a system of interactive exchange among the levels of the educational authority.

Hallak (1990) notes that any map of the priorities for development in the 1990s must consider the need for correcting imbalances, attaining universal literacy, reducing inequalities in access, expanding coverage, improving quality, and increasing efficiency in the use of resources. It has been suggested here that progress towards all of these goals can be advanced more effectively if attempted concomitantly with decentralization of authority and data use and localization of accountability; all of these actions define an incentive-based planning strategy. However, as Hallak also notes, there is no one single approach appropriate to all countries. Each nation's incentive system will be uniquely its own.

The next two decades will represent an opportunity to observe and learn from the experiences of many countries as they attempt to balance the legitimate political and bureaucratic needs for central authority and responsibility with the equally legitimate benefits to be gained from individual decision making. While incentives use is only one part of this larger process, it can be a leading wedge in overcoming traditional reluctance for the sharing of authority. Whatever the final system of shared responsibility that results, all countries will continue to be judged by how well the incentives of their education systems meet the needs of the children, youth, and adults within their societies.

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Chapter 11

Applying incentive concepts in educational planning

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and
Douglas M. Windham

1. Introduction

As was noted in the initial chapter, this volume of essays represents a foundational effort to introduce incentive concepts to a broader planning audience and to encourage the wider use of these concepts in educational planning activities. Obviously, given the breadth of the topic of incentives and the complexity of the topic of educational planning, this set of essays is neither conclusive or comprehensive. It is the hope of the authors that the ideas and opinions expressed here will prove foundational, however, and will be examined further from a variety of national and ideological viewpoints and applied to other forms and types of educational activity. This volume is designed to begin a dialogue about the use of incentives in education and in educational planning. The summary points expressed in this chapter are intended to facilitate that discussion and debate.

A major goal of the present effort has been to counter the many misconceptions about what incentives are and how relevant they can be to the decision-makers at various levels of the education system. It is critical to understand that incentive concepts are not synonymous with markets or explicit price systems in education. Incentives, purposeful or not, are created by every planner's decisions, every day, in every educational setting.

However, it is true that a part of the current interest in incentive concepts is related to the changes in political structures related to democratization, decentralization, privatization, and increased dependence on social partnerships. As the central planning role changes from one predominantly of establishing and enforcing mandates to one with a greater emphasis on stimulation and facilitation, an understanding of incentive structures and their proper use has become an essential planning skill. As the next century and its challenges approach, the need for planners at all educational levels to be able to use a wider set of planning tools will become essential; incentives will be a major sub-set

of those new tools. Regardless of the planners' cultural or value orientation, it ultimately must be recognized that collective effects are the product of a series of individual choices. Social objectives and collective goals remain at the centre of many planners' responsibilities, but the means of obtaining those objectives and achieving those goals will rely increasingly upon facilitation of individual decision making and the motivation of individuals to behave in ways that are supportive of social and collective ends.

The essays presented here were prepared with a significant degree of independence on the part of the individual authors to reflect their interests and priorities. Because of that independence, some overlap among essays exists and, more importantly, there are differences in the perceptions about the potential efficacy of incentive-based systems. This variation is appropriate in a newly emerging debate and will undoubtedly be reflected, probably even more broadly, by the reactions of readers.

In this final section, the editors present a summary of *their* perception of the key ideas gleaned from the individual essays. Rather than a simple summary of the individual essays, an attempt has been made to construct a set of key conclusions that can act as a checklist of essential elements of incentives theory as applied to educational decision making. While in no way a substitute for the detail available in the individual essays, it is hoped that this list of key conclusions will help reveal the breadth and depth of the potential contribution incentive concepts can make to education and to educational planning.

2. Key conclusions

The most important of the findings and conclusions concerning incentive-based planning concepts and their application to educational planning include the following:

2.1 Incentives and educational planning

- The challenges to educational planners is increasing, driven primarily by the greater educational diversity (of goals and of participants), more constrained resources, and competing social and individual demands.
- Educational planning is taking place within an emerging environment of increased individual participation to which actors in traditional planning methods find it difficult, if not impossible, to adapt.
- Incentive analysis in education looks at any reward or sanction, intended or inadvertent, which alters educational motivation and, thereby, behaviour.
- Incentives must respond to individual and to group values, the capacity to act, and the understanding of incentives that

exist among potential decision-makers; the last point stresses the central role of information in determining the effectiveness of incentives.

- The decision by central authorities to stimulate and facilitate individual decisions rather than to mandate behaviour is based on the judgement of where the best use of available information will be made to support central objectives and goals.
- Incentive methods are not anti-government or anti-central authority; in fact, the decisions about the proper division of authority between central and other decision-makers is the foundation from which incentive analysis must begin.
- The purported failures of the traditional planning methodologies have been as much contextual as related to inherent limitations in the methodologies themselves; however, both manpower planning and social demand planning have been guilty in some settings of under-emphasizing the issues of quality and adaptation to local interests and capacities that are now deemed critical to effective delivery of educational services.
- Incentive analysis does not assume that individual decision making will always be superior to centralized decision making; however, it does assert that broader consideration be given to the proper balance between 'planning for others' and structuring the context for individuals to 'plan for themselves'.
- Macro-educational planning must survive because central governments will retain a major responsibility for education into the foreseeable future; however, these responsibilities will increasingly be shared in partnerships with other levels of government, the private sector, non-governmental organizations, and communities and individuals, and it is in these partnerships where the incentive concepts will prove most useful.

2.2 *The new educational environment*

- Major changes anticipated for the educational environment include globalization, budgetary and financial constraints, and a reform of central government functions (especially related to democratization and decentralization).
- The agenda for central policy-makers will focus increasingly on promoting demand for training and education, enhancing educational quality, diversifying the educational delivery system, evolving a lifelong education structure, and mobilizing additional resources through educational partnerships.

- Educational development requires a long-term, recurrent, and relatively stable investment over time; as planning shifts from central direction to increased participation it will be essential to maintain this continuity and stability.
- Educational planning, and its appropriate use of incentives, can contribute to the improved design of educational policies by identifying critical constraints and alternative policy options.
- In the new educational environment, planning becomes a political as well as a technical exercise and understanding incentives and their uses can help meet these new conditions.
- In the future, it will likely prove more useful to engage in participatory planning processes, negotiations, and consensus building as a means to encourage voluntary co-operation from individuals, groups, and agencies in education; increasingly, it will be more difficult to expect participants to act for reasons with which they disagree or which they do not understand.

2.3 Incentives for motivation and behaviour

- The management literature on motivation is the conceptual foundation for the application of incentives in educational planning at all levels, from the national to the individual.
- The actual application of incentives in educational settings must take into account the reality of the educational environment and the special relationships that exist among educational participants, especially those involving teachers and students.
- Incentives will affect motivation only if the incentives are fitted to the individual needs, interests, and capacities of the participants.
- Incentives should be closely linked to the desired behaviour, provided differentially depending on performance, have a high probability of being received when earned, exist as part of a broader performance feedback and remediation system, and continue only as long as the desired behaviour continues.
- Individuals must have confidence that they can meet the behavioural expectations and understand the probability of rewards and sanctions; participation in incentive goal setting and in decision making will generally reinforce the positive effects of an incentive system.

- Educational incentives should be relevant to the participant and sufficient to assure behavioural change; educational incentives should stress positive rather than negative actions, be individualized to the extent feasible, be provided openly and equitably, and respond to the diversity of participant needs, values, and capacities.
- While excellence should be rewarded, it is no less essential to see that weaknesses are remediated and that participants are given the opportunity to upgrade their performance; educational incentives should be implemented as part of a comprehensive programme incorporating development of staff and upgrading of student skills and attitudes.
- Incentives 'planners' and 'managers' must first analyze participant motivation and then design an incentive structure, provide appropriate information, monitor behavioural change, and adapt and redesign the incentives based on these feedbacks.

2.4 Incentives in basic and secondary education

- Central versus local responsibilities for government funding of education vary from full-funding by the central authority to a variety of centrally supported subsidization schemes, each with different expectations for local and individual support.
- Grants-in-aid have shifted from 'foundational' schemes designed to assure the minimum availability of resources to approaches that stress equality (of effort or of expenditures, for example); the latter may have unintended incentive effects and prove inadequate at resolving underlying locational inequities related to the geographic distribution of wealth.
- The more decentralized the funding system, the greater the probability for inequities in allocation; ultimately, equalization is a responsibility of the central authority.
- The distinction between 'general' and 'categorical' grants-in-aid highlights the willingness of central authorities to grant discretionary authority to local agencies in how and for what activities funds are expended; increases in categorical funds restrain local authority but also provide assurance that funds are expended in those areas for which the central authority has the highest priority.
- Formula funding of education is a means for increasing the transparency and predictability of budget preparation and to clarify the funding incentive structure.

- Formula funding schemes are especially suitable for incentives to provide additional assistance for certain categories of students or of schools (for example, students with physical or mental disabilities or small rural schools).
- The expanded use of financial incentives in basic and secondary education is constrained by the political nature of the decision making, the lack of comprehensive performance standards, and the limits of educational research on the connections between funding and other incentives on performance.
- Among future options for improving equity and efficiency through incentives use, are to promote performance-based evaluation programmes, provide greater local discretion on use of funds to meet centrally established goals, increase forward funding to improve planning, and encourage greater central support for local problem-solving innovations that might later be generalized.

2.5 Incentives in higher education

- Public higher education institutions are being granted greater freedom but simultaneously face increasing social and individual expectations within an environment of increasingly limited resources.
- Financial incentives are motivators of change in higher education; however, a critical concern is whether sufficient funds are provided or are otherwise available to meet the costs created by new public mandates for higher education.
- Governmental financial incentives should allow institutions the latitude to adapt to local conditions; too often, government mandates fail to allow for this institutional flexibility.
- In developing countries, funding incentives have included increased cost-effectiveness, cost-sharing, increasing revenue, privatization of certain support functions, and greater decentralization of responsibility.
- In developed countries, an emphasis exists on the nature of the relationship between base and capital budgets and the need for special purpose budgets; the capital and special purpose budgets have been used in a manner analogous to categorical funding.
- Lump-sum funding creates the greatest possible incentive for individual institutional adaptation and responsiveness but does not assure funds will actually be used in this way.
- Formula funding in higher education has become more complex (either multiple formulas or increased variables in

the existing formulas) in order to adapt to higher education's own increased diversity; however, this increased complexity offsets the positive incentive effects of transparency and predictability that formula funding is intended to provide.

- Competitive grants and performance-based funding for higher education are politically popular because of their explicit link to performance measures, but are unpopular with institutional administrators because, while the incentives may be clear, the probability of winning or of continued funding simply adds more uncertainty to the planning process.
- Planning incentives for higher education requires sensitivity to cultural differences) both those among regions and cultural groups and those between institutional types; the failure to recognize these differences is a major problem in higher education planning.

2.6 Teacher incentives

- Teacher performance is determined by the teachers' perception of their responsibilities and their understanding of the incentives and disincentives for fulfilling those responsibilities.
- In many countries, the pay and other conditions of service for teachers are inadequate to assure the appropriate motivation of teachers.
- Teacher incentives should be developed as part of a community partnership that supports and extends the monetary rewards (salary and other benefits) commonly provided by the government.
- Incentive information needs for teachers exist at the system, regional, local, and even school level.
- Designing, implementing, and enforcing performance standards for teachers should be a basic component of any incentive scheme for education.
- However well planned, non-monetary teacher incentives will rarely be effective in the absence of adequate pay, benefits, and working conditions; non-monetary benefits are a complement, not a substitute, to monetary benefits.
- Group, rather than individual, incentives may be most effective for teachers so that one develops a cadre of motivated staff rather than a set of individuals.
- Incentive implementation for teachers will require 'top-down support' for 'bottom-up reform'.

2.7 *Incentives for student learning*

- Planning practical student learning incentives is constrained by inconsistent research findings, multiple theories and measures of learning effectiveness, conflicting perspectives on classroom motivation, and uncertain interaction and communication between macro-educational policies and local-school-classroom management practices.
- Incentives for students represent a convergence of national, regional, local, community, peer, and home influences.
- An emphasis on positive strategies for student remediation will prove more effective than criticisms of effort or attributions of inadequate ability.
- Students require encouragement to develop and maintain their own self-incentives for achievement; however, purely intrinsic rewards may be inadequate to motivate many students.
- Each classroom should operate as a 'laboratory' for learning incentive effects.
- Student learning incentives will vary among countries and national sub-cultures and the incentive system for students should reflect and be adapted to this fact.
- Parental involvement is a key determinant to the results of any incentive structure designed by school authorities.
- Gender issues, like race and ethnicity concerns, are a special incentive dimension that requires explicit consideration in planning and appropriate implementation and monitoring.
- Cross-national and cross-cultural comparisons are a potentially rich source of ideas for student incentive strategies.
- While macro-educational planners cannot monitor classroom incentive strategies directly, the planners should be familiar with the main types of strategies being used and how new macro-educational approaches may reinforce or conflict with these activities.

2.8 *Incentives for special education*

- Special education, because of its emphasis on individual learning needs, is an area of special relevance for educational incentives.
- Legislative approaches to special educational entitlements and funding have stressed macro-educational planning concerns at the expense of encouraging local flexibility and adaptation.

- The increasing population of special education students at all levels of education has increased the importance of adapting learning experiences to diverse needs; multiple alternatives and incentives help accommodate to this diversity.
- Criteria for identifying individuals as eligible for special education should not provide an incentive to over- or under-count such students; the learning needs of these students must be realized within the fiscal realities of resource availability.
- Incentive entitlements create mandates for service that should be accompanied by resources sufficient to meet these mandates; governments should be careful not to raise expectations and then devolve responsibility on local communities or institutions without concomitant financial assistance.
- As with other forms of education, monitoring of special education incentives should stress effects, not solely inputs and process measures.
- An international exchange of experiences in special education incentives can be especially useful; less developed nations can learn from the successes and failures of the developed systems and the developed systems may learn from the effective low-cost approaches used in the developing world.

2.9 *Incentive roles for central authorities*

- Informed choice is essential for effective responses by individuals and groups to centrally planned incentives; the creation of an 'environment for informed choice' becomes a major responsibility for central authorities under an incentive-based planning system.
- Central authorities must have detailed planning goals, objectives, and desired outcomes for education as a foundation for the design of their educational incentive activities.
- Analyzing the existing incentive configuration must be a central authority's first step in developing incentive-based planning.
- Only the central government has the required authority to establish the necessary division of responsibility among the levels of government and other educational participants; the central government will always have a unique comparative advantage in issues related to equity or standardization of activities.

- To support this planning partnership, multiple information delivery systems will be required and should be facilitated by the central government.
- Government incentives need to be piloted, evaluated, and revised by the central authorities prior to broad dissemination.
- However much the planning expertise of government may improve, it will be the flexibility of educational incentive systems to adjust to changing conditions that will determine educational success.
- In developing and operating any educational incentive system, government will face constraints in infrastructure, management capacity, adaptation to multiple cultural norms, and rapidly evolving legal and financial environments.

2.10 Linking information and incentives

- Educational information systems need to be evolutionary, changing to meet the emerging needs of planners and decision-makers at multiple levels of the system and to the rapidly improving technologies for data collection, assimilation, storage, and dissemination.
- Educational information about incentives and their effects will be challenged to reflect the broadened scope of education, the diversity of participants and programmes, the pressure for efficiency in information provision, increased accountability, and the changing technology base.
- Access to information should not be allowed to become another source of educational inequity; incentives information must be available in a form accessible to all who require it.
- Incentive-based information systems for education will incorporate needs identification, data collection, data processing and analysis, and – of special importance for incentives – information provision and facilitation of information utilization.
- Government's three main information roles are explication of mandates, stimulation of desired behaviours, and facilitation of decision making at the regional, local, institutional, and individual levels.
- The primary goal of information activities in an incentive-based system is the assurance of an interpretive context for incentives that allows for accurate and appropriate decision making.
- Monitoring and evaluation on a recurrent basis will be required to keep any information system supportive of the incentive-based planning activities.

- Technology can be adapted to facilitate individual choice or to reconcentrate choice in the hands of central planners; this critical choice between individualization and concentration of authority will determine much of the rest of the issues in the design of incentives for education.
- As with all incentives activities, information provision must adjust to the larger cultural, social, economic, and political environments in which educational activities take place.

This extended list of key conclusions can only suggest the detail in the individual essays presented earlier. Also, it can be seen that, as a planning tool, incentives are not inherently applicable to purposes that one would feel are good, for education or the society. In this way, incentives are like all other planning methods – basically amoral.

However, the use of incentives does have a special potential to remind the planner that real individuals and groups are the actors in and the recipients of all educational activities. That special ability, and the potential incentives, provide for a more efficient and equitable structure for decision making, should be sufficient reason for these key conclusions to be considered and for the essays from which they are drawn to receive careful study. As was noted at the end of *Chapter 1*, education's goal must be the betterment of the lives of all who are touched by it. It is in the belief that a better appreciation of incentive concepts and their place in planning will advance that goal, that this volume was commissioned and developed.

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The **BOOK**

This publication deals with the use of incentives in the planning and management of education as a way of promoting the desired behaviour in the key protagonists in the educational process. Educational planning was in the past too greatly concerned with preparing educational policies and plans and not enough with the mobilization of its players. The use of incentives has the potential of reminding planners that real individuals and groups are the actors and recipients of all educational activities. As the central planning role changes from one predominantly of establishing and enforcing mandates to one with a greater emphasis on stimulation and facilitation, the understanding of incentive structures and their proper use becomes an essential planning skill.

This volume of essays starts with a discussion of the concepts of incentives and of their planning in educational planning and management. It counters many misconceptions about what incentives are and how relevant they can be to planners at various levels of the educational system. It then explores the new educational environment. Much of the interest in incentive concepts is linked to the changes in political structures related to democratization, decentralization, privatization and increased dependence on partnership. The remaining chapters are organized around applications of incentive analyses to current educational issues and the use of incentives for specific planning and management tasks. Formula funding in basic and secondary education and fiscal and legal incentives in higher education illustrate the relationship of incentives as mandates and incentives as rewards. The incentives for teacher performance and for pupils' achievements, two important areas of concern for planners and managers of education, constitute two separate chapters. This is followed by a discussion of the use of incentives in special education. The final chapters emphasize the role of central authorities in educational planning and the importance of linking the information base to incentives.

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ISBN 92-803-1164-6